



# COAL AGE



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No. 20

## Why I Believe In Safety First

*Being a CREED for the EMPLOYER and the EMPLOYEE*

### *Employer:*

**I BELIEVE IN SAFETY FIRST** because, popular ideas to the contrary notwithstanding, I have a soul—a conscience which is torn in sympathy with the torn limbs and bodies of my workmen. ¶ **BECAUSE, AS AN EMPLOYER**, I assumed before God and man the duty of being in part my brother's keeper—his hurt is my hurt, his pain is my pain, the sorrow of his widow and the cry of his children ring in my ears after he is gone. ¶ **I BELIEVE IN SAFETY FIRST** because waste of human ability and human life is destruction of God's most valuable product on earth, and if I fail to do my utmost to conserve that, I have left undone a *sacred* duty—committed a sin of omission, not only against my kind, but against my Creator, and must certainly give account for my delinquency. ¶ **BEING A BUSINESS-MAN** I believe in Safety First from a purely business standpoint, as well as because of its humanitarianism. I try to live up to its tenets because it is bad business policy to do otherwise. No dividends accrue to me by way of the hospital, law courts or damage suits, but *preventing* them means money for me and my company. Accident prevention promotes efficiency. ¶ **FURTHERMORE, BEING IN BUSINESS**, I know the power of advertising my wares and my plant; and living up to the Safety First idea is the best kind of advertisement. I also know that an ounce of publicity from accidents counteracts a pound of the brand furnished by our advertising department, breeds strife, discontent and widens the breach between me and my employees, and that's the worst kind of business policy.

### *Employee:*

**I BELIEVE IN SAFETY FIRST** because the loss of my ability to labor means suffering for those I love most on earth; it leaves to the mercies of a more or less indifferent world those whom every workman desires most of all to protect. ¶ **I BELIEVE IN SAFETY FIRST** because it tends to conserve my ability to labor and that ability is my sole capital; losing it, I am bankrupt. ¶ **I BELIEVE IN SAFETY FIRST** because my safety means the safety of my fellow-workmen. In risking myself I risk others. ¶ **I BELIEVE IN SAFETY FIRST** because the bread I earn with my own hands is sweeter to me and mine a thousand times than charity in any form.

### *Both Together:*

**WE BELIEVE IN SAFETY FIRST** because it pays in assurance, comfort, money and health. To the employer it means less worry and a larger ultimate bank account; to the workman it brings assurance of living to enjoy the fruits of his labor. ¶ **IT MEANS** that mothers shall have the comforts due them in their age; **THAT WIVES** shall not unnecessarily become untimely widows; **THAT CHILDREN** shall have fathers to provide for them when they need their care and protection most—when they are young. ¶ **It also means** that cripples and helpless wrecks who were once strong men shall not be considered a byproduct of industry.

BY SIM C. REYNOLDS

# Modern Mine-Plant Design--II

By M. L. HYDE\*

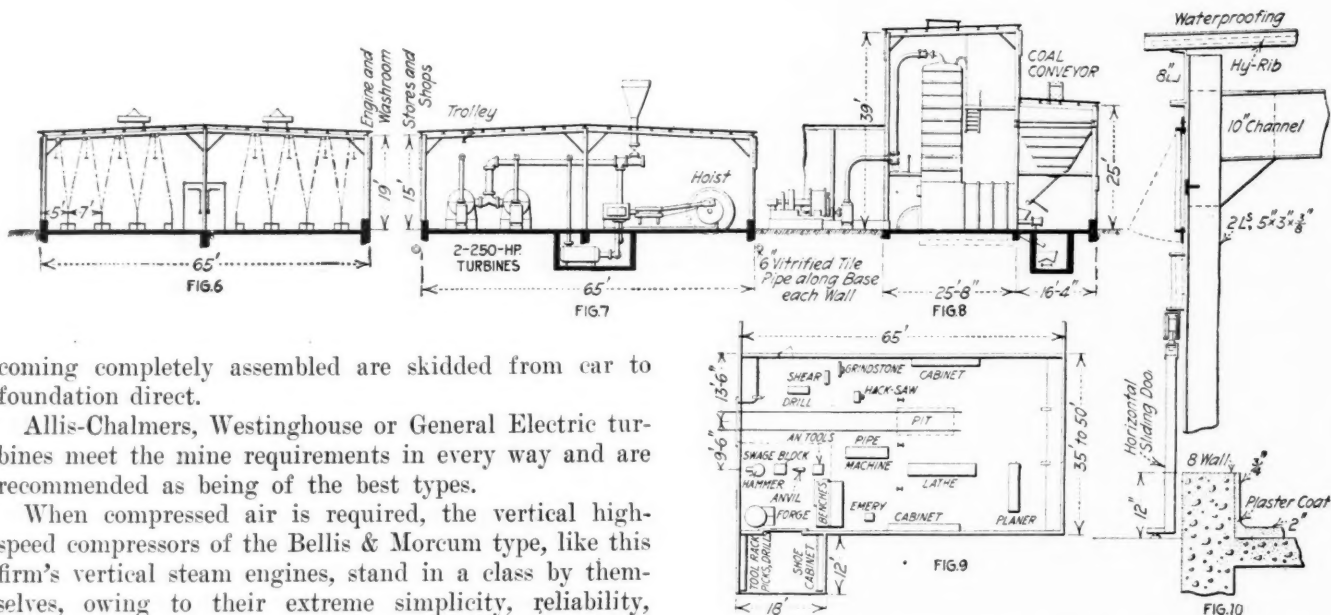
**SYNOPSIS**—This article, which is the second of two on this subject, details the various items of equipment of the surface works.

In a steam plant, turbines as prime movers stand first. Operated noncondensing, these machines require from 35 to 50 lb. of steam per horsepower-hour. When run condensing, they use from 15 to 20 lb., the equal of the best compound engines. When waste or slack which must otherwise be stocked is used as fuel, the noncondensing type is recommended; in other cases, the condensing.

Turbines are lower in first cost than their equal in engines, require less space and smaller and lighter foundations and are easier to erect—units up to 330 kw.

A safety device should be fitted to every hoist which will automatically close the main throttle as the cage nears the shaft collar and render it impossible to again open this valve until the hoist has been reversed. For raising above the dumping point, an auxiliary throttle may be employed. Among the best types of steam hoists are those manufactured by the Vulcan Iron Works and the Wellman-Seaver-Morgan Co.

It is necessary, when utilizing exhaust steam from the hoist engine, to provide for the periods of lull between hoists. This is done by mixed-pressure turbines, designed chiefly for low-pressure work, their steam supply being protected by means of a large steam receiver partly filled with water, which absorbs heat from the hoist engine's exhaust while hoisting and gives it up during idle



FIGS. 6 TO 10. SHOWING CROSS-SECTION OF WASH HOUSE, ENGINE AND BOILER ROOMS, DETAIL OF WALL CONSTRUCTION AND ARRANGEMENT OF SHOP

coming completely assembled are skidded from car to foundation direct.

Allis-Chalmers, Westinghouse or General Electric turbines meet the mine requirements in every way and are recommended as being of the best types.

When compressed air is required, the vertical high-speed compressors of the Bellis & Morcum type, like this firm's vertical steam engines, stand in a class by themselves, owing to their extreme simplicity, reliability, small amount of power required to operate, noiselessness, small floor space and lower cost erected.

## STEAM HOISTS ARE PREFERABLE

Electric hoists are not feasible at a mine generating its own steam. High first cost overrides any small economy that can be expected over even the piston valve, and none need be looked for over engines fitted with corliss valves.

Current from an outside source should cost less than  $\frac{3}{4}$ c. per kw.-hr. to compete with coal valued at 90c. per ton, assuming the engine without expansion uses 80 lb. of steam per shaft horsepower per hour and the boilers evaporate 7 lb. of water per pound of coal.

German tests show power consumption of an electric hoist using the Koepe disk with tail ropes (far more efficient than any arrangement of ropes and drums) to be 1.6 kw. per shaft horsepower.

Up to a shaft depth of 600 ft., the flat-faced, single-drum, first-motion hoist is preferable to the conical face with the disadvantage inherent to this style—the risk of the rope jumping its groove.

periods. The receiver or regenerator may be placed outside the engine room and as close to the hoist and turbines as possible.

Switchboards should be made up of standard marble panels, set well away from the wall, so that they may be easily cleaned and repaired, while a pipe railing surrounds them for safety. Wiring diagrams posted on the wall, with the wires on the board tagged to correspond therewith, will enable anyone to follow the system and locate possible trouble.

## JET CONDENSERS ARE TO BE PREFERRED

When sufficient water is available for condensing and it is not necessary to have condensed water for boiler feed, the simple jet condenser is preferable to the surface type.

Boilers of the vertical type are recommended for mine power plants. They are safe, simple, accessible, occupy small floor space, are moderate in cost and, most important, their system of circulation is the correct one.

\*Pembina Coal Co., Evansburgh, Alta.

An automatic nonreturn valve on each boiler allows cutting out any unit and avoids danger of steam from other boilers flowing into it.

To get from boilers their maximum efficiency, mechanical stokers, mechanical draft and superheaters are essential. Hand-firing and natural draft are the two worst enemies of economy and not to be considered in the modern plant.

Stokers should be of the self-cleaning type to avoid hand work and the admission of cold air while cleaning. It is safer to leave their design as well as that of the draft system and superheaters to the boiler people, letting them install and guarantee this equipment complete, after first submitting them samples of the coal to be burned and the water to be used.

Venturi water meters allow of keeping records of the water consumed and give a basis on which guarantees may be made (when combined with a careful check on the coal burned and cars of ashes removed). Gas analysis and stack temperatures should also be recorded, if the mine is to be in a position to give accurate information on its product.

Steam lines must be extra heavy and well protected with a thick magnesia covering. This insulation should not be put on until steam has been carried for at least a week to enable the engineers to bring all packed joints home. Welded connections, a minimum number of joints and minimum lengths of pipe between units are to be aimed at. All pipes and connections should be accessible on each side for repairs.

Boiler blowoffs must all discharge in one direction and no opportunity be allowed for the blowoff from one boiler to back up on another. The pipes for carrying blowoff steam should be large and so arranged that there is no danger of freezing.

Open feed-water heaters are preferable to the closed type from every standpoint—first cost, saving in heat and water from condensed steam, slow depreciation, accessibility, ability to carry overloads, etc.

#### CENTRIFUGAL BOILER-FEED PUMPS ADVANTAGEOUS

Centrifugal pumps for boiler feeding are rapidly becoming the standard type. They give a continuous flow of water without shock or water-hammer, are favorable to boiler-feed regulators and water meters, require but little lubrication, small floor space, are simple and reliable and, when driven by steam turbines, form the most desirable units obtainable.

Fig. 8 shows a section through a plant of good design and requiring a minimum of labor to maintain and operate. Coal is brought from the tipple by means of a Jeffrey cable conveyor (with 9-in. disks on a  $\frac{7}{8}$ -in. cable) to the boiler bunker. This conveyor is set on the roof, allowing of completely housing-in the bunkers to avoid dust. It is motor-driven from the boiler-room floor.

The bunkers are of the Berquist type, combining minimum weight and upkeep expense with maximum life. All steel used is fully exposed and therefore easily kept painted.

From the bunkers the coal flows to stokers, the ash passing to a magazine under the boilers which in turn discharges to ash cars running in a tunnel below the floor.

The boilers are set in batteries of two, and space is left at one end of the room for the draft fan and engine as well as for an overhead platform supporting the hot-blast system. At each end are 10-ft. sliding doors, the opening for which should also be protected by high steel gates.

In the engine room are the turbines, hoist, switchboard, feed-water heater and pumps. The floor is of concrete and should be placed on a level with that in the rest of the building if condensing machinery is not used. Where condensing equipment is employed, the floor of the engine room should be 6 ft. above the floor in the remainder of the building.

#### PIPE RAILINGS AROUND HOIST AND SWITCHBOARD

The hoist and switchboard should be entirely surrounded by a strong pipe railing. A 10-ft. sliding door protected with an iron gate is necessary for the removal of either complete units or parts of the various machines. A crane, portable commutator grinder, telephone, enameled signal signs, fire extinguishers, sand buckets, clock, a desk and a tool cabinet should be included in the equipment.

In case power units making even a slight noise are used, it would be advisable to partition off the hoist with glass and Hy-rib.

The providing of miners with bathing facilities is now more or less general practice and eventually will become compulsory. The requisites are good ventilation, light, heat, ease in cleaning, reasonable privacy to bathers and dressers and reasonable protection to their property when left in the rooms.

The washing should always be done under showers and never in tubs, as diseases, particularly those of the eyes, are easily transmitted. A shower allows of a quick cleansing all over, is refreshing and pleasant, and the waste water is removed as fast as it falls. For each bather there is required 8 to 10 gal. of water, plus 10 more for scrubbing out the room, etc. Not over 10 min. is necessary for a comfortable bath. The faucets and all fittings should be of the strongest, as men often use considerable strength in operating them.

Clothes should be stored and dried by suspension from hooks hanging from the roof. This requires a height of 20 ft., allowing for the clothes clearing the floor by 8 ft.

The form of hook shown in Fig. 13 is a satisfactory one. These are numbered, and one is allotted to each user of the room. The hooks are hung at the end of a stout chain running over a small pulley. The other end of this chain is fastened by a padlock to the back of the bench, as shown in Fig. 13. The chains must be long enough to extend from the padlock and over the pulley to the clothes hook, with a dead length below the padlock to allow of lowering the clothes to the floor. This extra length cannot be allowed to lie on the floor, and a small partitioned trough should be set under the top bench-pipe for its reception.

Hangers should be on 20-in. centers and staggered. Benches should be of the design shown, allowing of turning the hose on the floor. Washbowls should be individual and of heavy construction. The type furnished by the Manufacturing Equipment and Engineering Co., of Boston, is recommended. Every washroom should be further equipped with a bubbling drinking fountain,



locked cabinet for the keeper's supplies and garden hose for scrubbing.

The floor should be of waterproofed concrete, with rounded corners where walls and floor meet. The side walls should have three coats of white enamel to a height of 7 ft., allowing of their being scrubbed. Shower partitions may be of painted sheet iron with pipe and pipe-fitting supports.

#### WARM WATER IS PREFERRED TO HOT AND COLD

Water with a regulated temperature of 100 deg. should be furnished. This may be heated in a standard type of heater by exhaust or live steam. Two separate pipe lines for hot and cold water complicate the plumbing and are unsatisfactory. Urinals must not be allowed in the main washroom.

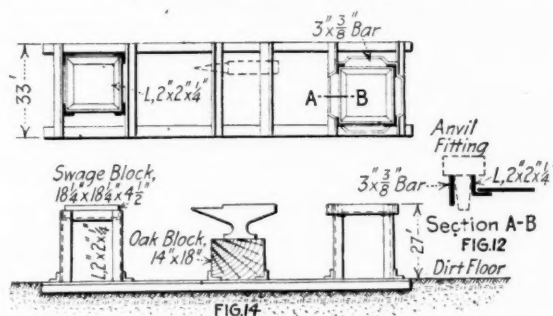
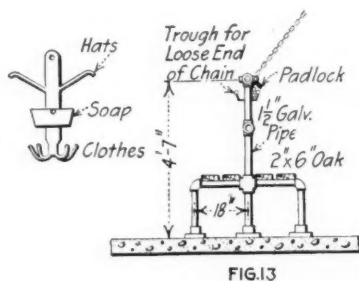
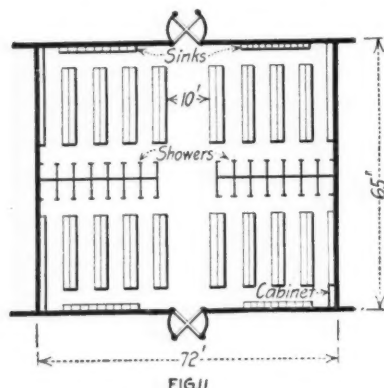
The rescue station should be placed between the washroom and the warehouse on account of quiet, nearness to water and the ability of the washhouse attendant to care for it. Men on stretchers can be taken here through the washroom and thence directly outside if an ambulance is called.

The equipment should include: 1 medicine cabinet, 1 first-aid apparatus cabinet, 1 blanket chest, 2 cots, 6

notes the necessity of the overman's office opening onto the street and allows of placing it where all inner operations of the plant come under his eye. Where the overman does the hiring, men may be conducted to his office by the washroom attendant.

In the wareroom are kept, in tiers of bins, small tools, electric supplies, nails, spikes, repairs of all sorts, miners' tools, paints, waste, reserve stocks of lamps, magnetos, stationery, etc. The equipment should consist of numbered tiers of sectional steel bins and shelving such as made by the Berger Manufacturing Co. A desk and stool, a pair of scales, tools for opening packing cases, a truck, fire extinguishers, telephone connected with local system, index system for stock and a catalog cabinet complete the furnishings.

Partitioned from the main wareroom are two other rooms. One of these will be the auxiliary storeroom in which are stocked heavy supplies that are usually carried in piles. These will consist of brattice cloth, rope, wire, cement, fireclay, lime, roofing, building paper, heavy repair castings, etc. The other room will be for the storage of oil. It should be equipped with 8 to 10 two-barrel type-B 14-gage Boswer oil tanks, set back to back and fitted with 1-qt. pumps and nameplates. A barrel



FIGS. 11 to 14. SHOWING ARRANGEMENT OF WASH ROOM AND DETAILS OF WASH-ROOM BENCH AND OF ANVIL, SWAGE BLOCK AND TOOL HOLDER IN BLACKSMITH SHOP

ambulance stretchers, 6 rubber blankets, 6 wool blankets, 6 rockers, 1 flat-top desk and chair, 1 Siebe Gorman vibrator, 1 Siebe Gorman Red Cross first-aid cabinet, 1 Siebe Gorman Red Cross pannier, 4 sets 2-hr. Proto apparatus, 4 oxygen tanks, 4 hand electric lamps, 4 axes, 4 suits oil clothes and rubber boots, 1 operating table, 1 instrument stand and sterilizer, hot-water bags, ice packs, enameled buckets, bedpans, etc.

Next to the washroom should be placed the lamproom. This should be equipped with charging racks, battery lamps, storage racks, oil lamps and a zinc-covered general-repair and cleaning bench, with lockers below carrying repairs, tools, etc. Sand buckets, fire extinguishers and record books finish the equipment.

Next to the lamproom comes an office for the use of the overmen, shotfirers and the time clerk. This should be fitted with a flat-top desk, six chairs, a record-book cabinet, telephone to main office and mine and a railed-off entrance for men awaiting orders. A private bath should open direct from this office, avoiding the necessity of the officials having to mingle with the rest of the force. This is an advantage mainly from the standpoint of discipline.

Hiring of men is all done at the main office, where they receive their checks and credentials. This elimi-

runway above these tanks allows of depositing a barrel direct from the trolley serving this room, emptying it and taking it out for reshipment.

An objection may be raised to the storing of oils in the general building. The storage-battery lamp is becoming universal, and even in the largest operations but few of the oil type of safety lamps will be required. High-volatile oil for these lamps should be stored in an underground tank of 100 gal. or more capacity (with pipe connection leading to the lamproom), fitted with locked pump. This type of oil storage is accepted by insurance companies in the most crowded sections of large cities and is entirely safe.

In the auxiliary storeroom should be placed a small office for the warehouse foreman, with a wicket opening to the shop.

#### THE ESSENTIALS OF GOOD SHOP DESIGN

The important features of good shop design are light, space, proper equipment properly placed, ability to handle heavy work without manual labor or interference with other operations, and cleanliness. A shop should be lighted on three sides and have a southern exposure. Illumination should be obtained from windows set high enough to throw the light down on the machines and to



avoid their being broken from careless handling of long pieces of stock or work. The walls should be painted black for a height of 6 ft. from the floor; above that, including the roof, white.

Electric clusters must be placed over each important machine, the erection floor and the anvil. An extension light should allow of inspection in the pit.

Ample space around each machine for its work, an erection floor large enough to assemble mine cars, machines or locomotives, and a concrete-lined pit (to facilitate locomotive repairs), adjacent to the erection floor, are all essential.

A standard equipment for the shops is here listed:

#### BLACKSMITH SHOP

- 1 No. 08-T Buffalo down-draft forge with 48-in. fire pan, water and coal box.
- 1 No. 3 Buffalo steel pressure blower, belt-driven.
- 1 300-lb. anvil with fittings.
- 1 18 $\frac{1}{4}$ x18 $\frac{1}{4}$ x4 $\frac{1}{2}$ -in. swage block.
- 1 steel combination stand, as in Fig. 14.
- 1 blacksmith's bench with a  $\frac{3}{8}$ -in. round bar set a distance of 2 in. away from its edge, on which to hang tongs.
- 1 blacksmith's workbench with 50-lb. blacksmith vise and 6-in. pipe vise.
- 1 No. 5 Buffalo combination armorplate punch and shear without truck.
- 1 150-lb. Mayer's Little Giant power hammer.
- 1 30-in. Peerless belt-driven upright drill with power and hand feed, with a set of drills.
- 1 10-in. base blacksmith's taper mandrel.
- 1 set of hammers, tongs, bolt clippers, a 200-lb. anvil and a blower for outside work and tuyere irons for outdoor forge.

#### MACHINE SHOP

- 1 20- and 36-in. by 14-ft. Rahn Hannon Co. belt-driven gap lathe, with regular equipment of chucks, taper attachment, turret and tools. This takes the place of one large and one small lathe for making bushings, turning commutators, etc.
- 1 Oster pipe machine with extra dies for  $\frac{1}{2}$ -in. to 6-in. pipe and 8 sets of bolt dies for  $\frac{1}{4}$ -in. to 1 $\frac{1}{2}$ -in. bolts.
- 1 36-in. by 12-ft. Niles-Bement-Pond Co. planer for making switch points and keyseats and for facing valves, etc.
- 1 portable Sullivan electric drill.
- 1 No. 2 Marvel hacksaw, belt-driven.
- 1 36x5-in. Keystone grindstone, belt-driven.
- 1 Partridge emery grinder with 1 coarse and 1 fine wheel.
- 1 set of pipe cutters, pipe wrenches, ratchet wrenches, blowtorch, bench and machinists' vises, diestock sets, reamers, taps, micrometer calipers, screw and wire gages, hacksaws, machinists' hammers, tinners' tools, etc.
- 6 Buda 1-B track jacks.
- 2 Jim Crow rail benders.
- 1 roller rail bender.
- 1 set of numbering stencils, etc.
- 2 tool cabinets.
- 1 general bench for electricians and machinists.
- 1 20-hp. motor, with necessary line shafting, bearings, belts, etc.
- 1 2 $\frac{1}{2}$ -ton portable Dale crane and hoist.
- 1 No. 51 Universal crescent wood cutter.

A device for turning over mine cars is also necessary. This can be made up of a shaft with two drums carrying ropes with hooks at their ends and a means for rotating the whole.

#### HOW THE EQUIPMENT SHOULD BE ARRANGED

The proper location of equipment is as follows: In the corner of the shop and next the entrance should be the blacksmith with his forge at his back, anvil in front with swage on one side and tool rack on the other. Next to the tool stand is placed a small bench on which tongs and hammers are carried. Horseshoeing should be done in a shed outside the shop. This shed should be roofed and have a horseshoe and shoeing-tool cabinet on one side and on the other, or that nearest the central lane, a numbered rack for miners' picks and drills, where they can leave them at the end of the shift and get them the

following morning. This avoids their entering the shops. Across from the anvil should be set the drill press, punch and shear and the blacksmith's workbench.

The hacksaw should have a prominent, clear setting, as heavy work is brought to it at all hours. Such work should not interfere with any other work or machine. Next in importance is the pipe threader, work in which should also clear all other machines. The lathe and the planer come next in importance, while the grinding tools may be set back against the wall.

By having a tamped dirt floor under the blacksmith and giving him a down-draft forge, this department can be kept clean. The rest of the shop should be concrete floored and can be kept in good condition with little trouble.

Outside the shop should be a blacksmith-coal bin, an ash bin, a scrap-iron bin and an auxiliary rack for bar iron and pipe, also an outdoor forge and anvil for hot-weather work. It is during the summer that most of the heavy repairs are made, and to ask the blacksmith to stand over an inside forge is offering him a pretty warm job.

No woodworking tools are shown in the accompanying drawings, as it is assumed the entire equipment, including cars, will be of steel, making such machines superfluous.

#### CONSTRUCTION OF AUXILIARY POWDER HOUSE

The auxiliary powder house should be of Hy-rib and steel construction on 8-in. concrete foundation walls, wood-lined and wood-floored. The flooring should be of 2x4-in. tongued-and-grooved milled planking on 4x4-in. sleepers laid in cinders. The woodwork should be nailed with copper nails, and a wood door with brass lock and hinges be provided. Lightning conductors should be placed at each end of the building, which should be 20 ft. long, 16 ft. wide and 8 ft. high.

This building is used for storing empty powder canisters at night and for filling them before the shift goes down. It should be fitted with numbered pigeonholes for the canisters, a wooden bench for filling and a copper hammer and chisel for opening cases. Here are brought by the industrial car each morning sufficient cases of powder from the main magazine to meet the day's requirements. If any cases are left over, they are immediately returned to the main magazine.

About 20 ft. back of the auxiliary powder house should be a small detonator storage shed of concrete, with wooden lining, enabling the warehouse foreman when issuing canisters to give out at the same time the necessary detonators.

A light housing with Hy-rib roof should cover the wet- and dry-sand bins, with a space for the sand drier between them. This allows of shoveling wet sand to the drier and from there the dry sand to its bin. S. B. Stine, Osceola Mills, Penn., makes a typical drier of good design.

#### STEEL TANK IS PREFERABLE TO WOODEN ONE

A 30,000-gal. tank will meet all requirements for water supply and should be placed reasonably close to the feed-water heater. A steel tank remains watertight indefinitely; there is no danger of its bursting, even in the coldest weather; and it has a life fully three times that of a wooden one. Such a tank should, however, have a

steam pipe run up through the center for cold-weather protection. Below the tank a small shed should be placed for the housing of a reel carrying sufficient length of hose to protect the entire yard. This shed may also contain the electrically driven deep-well pump.

The watercloset must be convenient to all employees, yet off the main lines of travel. The fittings should be of enameled iron; urinals on one side and closets on the other. Shields are better at the entrances than doors, as it is almost impossible to keep the latter shut.

The airshaft should contain a partition so as to allow of handling supplies and men on one side (in the case of a large mine, or as an auxiliary outlet for men in the case of a small one) and air on the other. A platform cage with an end-hoist tower and a single-drum second-motion electric hoist, with rope, sheave, telephone, pneumatic signals and enameled signs form the equipment. A reversible fan of the Sirocco, Jeffrey or Sullivan type, driven by silent chain from a variable-speed motor, housed in the same building with the hoist, is recommended. In these units steel and Hy-rib again may be used to the best advantage.

In cold climates a powerful air heater should be installed on one side of the fan, assuming that when blowing, half the air is heated to a temperature sufficient to bring the whole to a point where the danger of ice forming is eliminated.

The main powder magazine should be built along lines recommended by the mining department in the state in which this building is to be erected. In case there are no particular specifications to be met, the designs recommended by the United States Bureau of Mines may well be adopted.

Arrangements should be made so that part of the bone in the waste bins under the picking tables may, instead of going to cars, be diverted to a roll crusher feeding an elevator, in turn discharging to the boiler-room coal conveyor.

It is almost impossible to ascertain the heat available from refuse until the tipple has been placed in operation, but as no additional expense is required to arrange for the possible future installation of the apparatus described, such arrangements should in every case be made when the tipple is being built.

## An Interesting Pennsylvania Mine

By J. P. VOGEL\*

*SYNOPSIS—A large preparation plant is here described. The capacity is 6,000 tons daily, and the bone coal secured in the picking process furnishes fuel to a large steam-driven central power station.*

The Lucerne mines of the Jefferson & Clearfield Coal and Iron Co. are located at Lucerne, Penn., on the Buffalo, Rochester & Pittsburgh R.R., about 5 mi.

mines of the company and still others it contemplated building, were such as to warrant the erection of a large power station. Lucerne was centrally located, and the good water-supply and cheap boiler fuel available from the preparation plant made it an ideal location for the central power station.

The Freeport seam of coal is here mined, being reached through two drifts and one shaft. The great care with which this coal is prepared for the market made an efficient preparation plant imperative; and for economy,

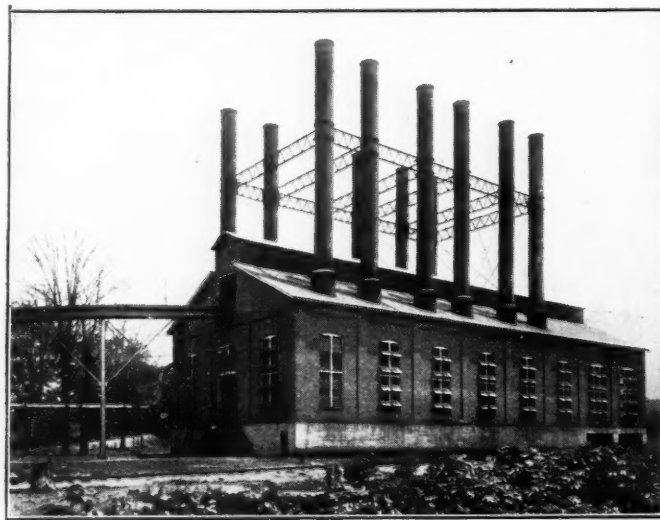


FIG. 1. LUCERNE POWER STATION

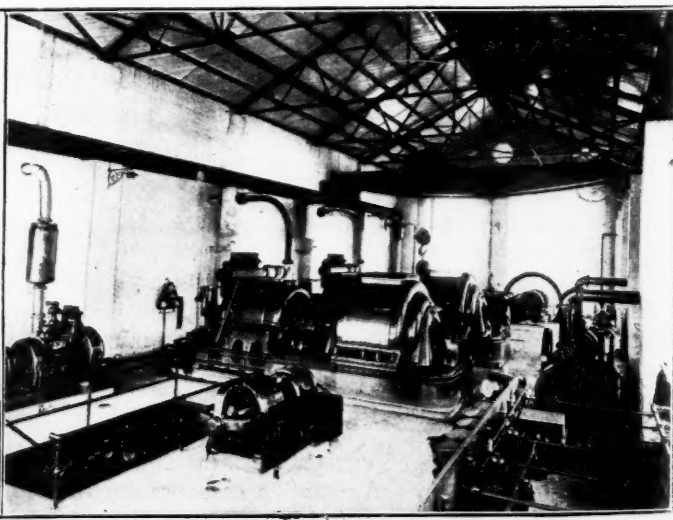


FIG. 2. INTERIOR OF POWER STATION

from Indiana. This plant was built in 1914, and the surface improvements are of the most substantial and permanent character.

At the time this plant was designed, the power requirements for these, as well as for some other then existing

both in first costs and operation, the central preparation plant, or tipple, was built to receive the coal from both the drifts and the shaft.

The accompanying Figs. 1, 2 and 3 show exterior and interior views of the power station, which is of brick and concrete construction. Steam is generated in twelve

\*Pittsburgh, Penn.



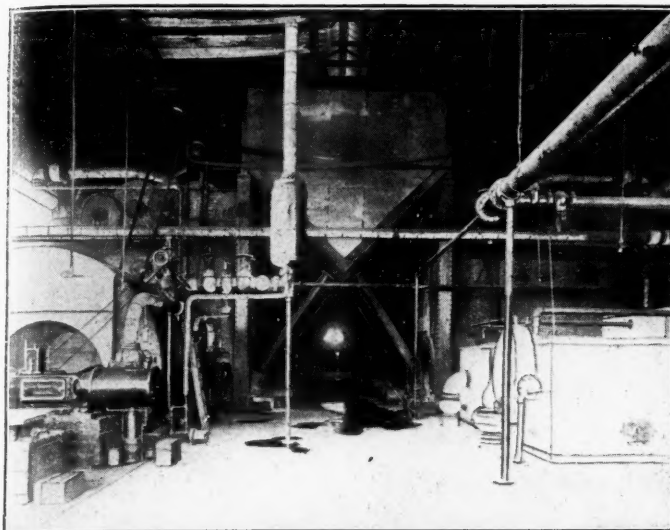


FIG. 3. ANOTHER VIEW IN POWER PLANT

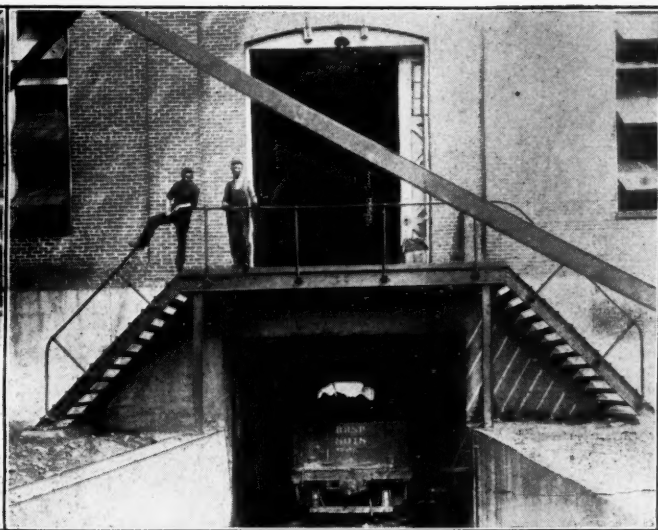


FIG. 4. ASHES ARE DELIVERED TO GONDOLA CARS

500-hp. Stirling boilers—three batteries of two boilers each on either side of the boiler house. These units are equipped with Jones underfeed stokers, fed from an overhead steel-and-concrete bin. It should here be noted that the fuel for this boiler plant consists, when running normally, of practically all bone coal, or refuse that has been separated from the coal in the preparation plant. This not only makes cheap boiler fuel, but greatly reduces the volume of this refuse, and to that extent simplifies the ever-growing serious problem of waste disposal.

The water-supply is taken from a local stream (Yellow Creek) and is heated and slightly treated in Cochrane feed-water heaters which receive exhaust steam from the smaller engines. The ash is delivered directly to gondola cars from the stokers, as shown by Fig. 4.

Fig. 5 shows the headframe over the shaft, which is located several hundred feet from the power house. As will be noted, this headframe is of steel construction. The shaft at this point is a three-compartment one—one compartment is a pipeway and the other two, or hoist compartments, are arranged for using tandem cages which hoist two cars at a time from the mine.

Loaded and empty cars are handled to and from the cages, as well as trips of loaded and empty cars by elec-

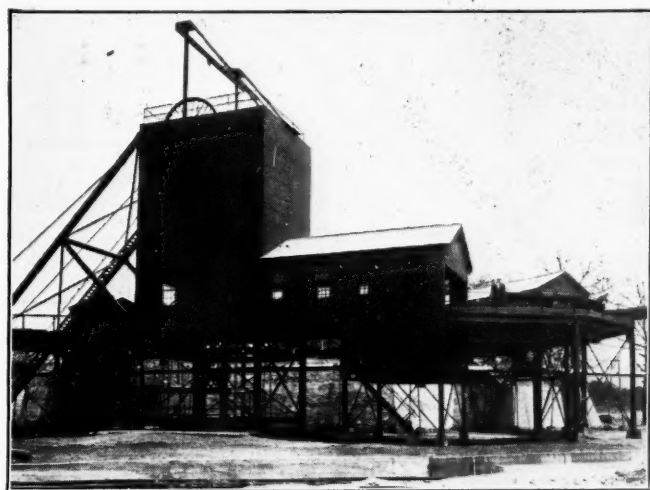


FIG. 5. HEADFRAME OVER SHAFT

trically driven car-caging and trip-handling apparatus, which reduces labor at this point to a minimum. From here to the tippie, or preparation plant, is a distance of about 4,000 ft., and loaded and empty cars are handled between these points by electric haulage motors pulling trips composed of 60 cars or thereabout to each trip.

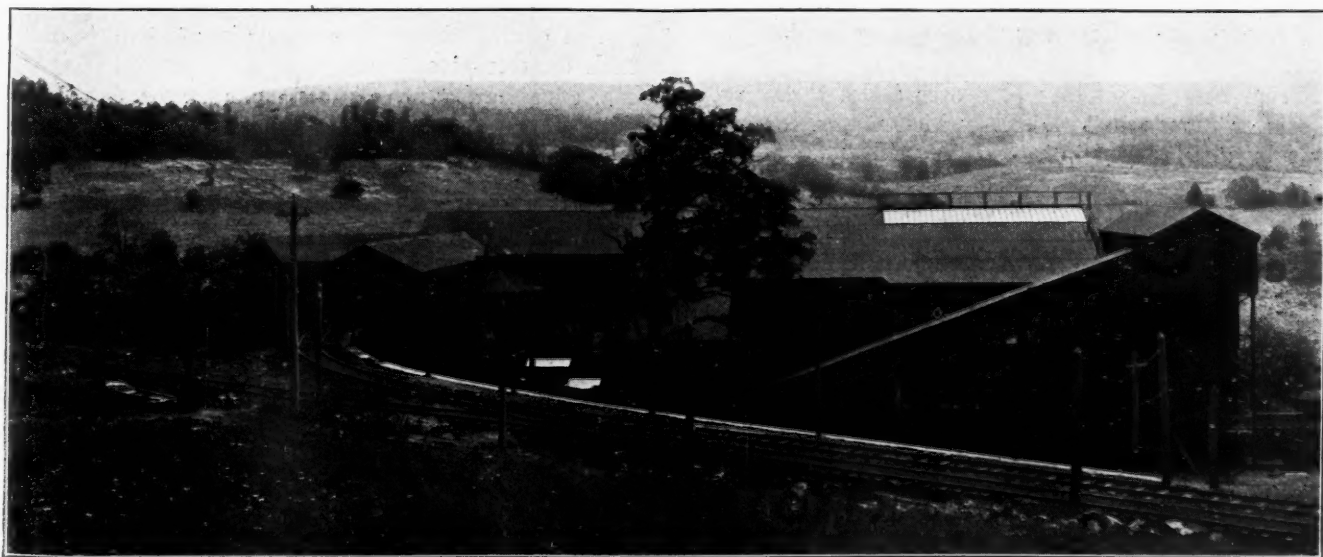


FIG. 6. THE TIPPLE IS ENTIRELY OF STEEL CONSTRUCTION AND IS ONE OF THE LARGEST IN AMERICA





FIG. 7. THE TIPPLE CAPACITY IS 6,000 TONS PER 9-HR. DAY

The tippel at Lucerne, as shown in Figs. 6 and 7, is entirely of steel construction and is one of the largest and the most complete preparation plants installed at a bituminous mine in this country. The capacity is 6,000 tons of coal per 9-hr. day, and the entire tippel is built in two parallel units, each entirely independent of the other.

Loaded pit cars are brought into this tippel from two sides—one from the shaft and the other from the two drifts. Upon the arrival of the loaded trips at these approaches or landings, they are passed through the tippel mechanically. Endless chains with dogs feed the loaded cars into the tippel at a uniform rate, and cars are stopped before reaching the scales by car-feed regulators.

From here loaded cars pass over scales through two crossover dumps to kick-backs which return the empty cars by gravity to trip-makers that make up the trips of cars ready to be coupled and returned to the mine.

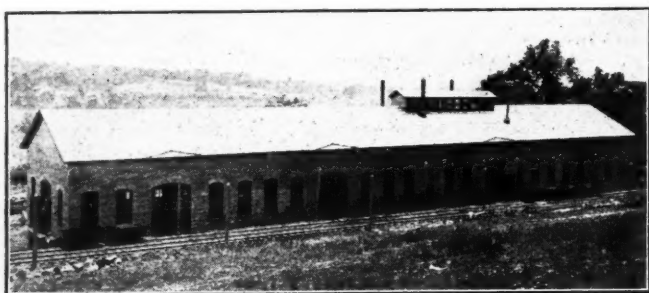


FIG. 8. THE MACHINE, BLACKSMITH AND CARPENTER SHOP

The operations of the trip-feeders, car regulators and trip-makers are controlled by one man in the operating tower in the tippel.

From the dump, coal is passed to a feeder which delivers it uniformly to the shaking screen. This screen makes two grades of coal—lump, and nut and slack. The lump is passed directly to the picking table, while the nut and slack is delivered to a revolving screen which separates it, the nut passing to a nut picking table and the slack to a combination conveyor.

After the lump and nut are picked, they are either loaded separately or mixed to form various grades of coal. The refuse that is picked from the coal is delivered through chutes at the side of the men to a conveyor which delivers it to a refuse picking table. Here the bone, after having the distinct slate picked from it, is delivered to a crusher which reduces it and stores it in a bin at the front of the tippel until it is taken by an electrically driven larry to the boiler house. The entire operation of all apparatus making up the two units is under the control of one man stationed in the front of the picking house.

Fig. 8 shows the shop at Lucerne, which is built of brick. This shop is divided into three parts—that is, machine, blacksmith and carpenter departments—and is well and adequately equipped with modern electrically driven tools.

This plant was designed and built under the direction of L. W. Robinson, president of the Jefferson & Clearfield Coal and Iron Co., at Punxsutawney, Penn., by Heyl & Patterson, Inc., contracting engineers, of Pittsburgh, Penn.

# Mine Inspectors' Institute of the United States of America\*

*SYNOPSIS—Aims and purposes of the Institute and the benefits to be derived from association in the work of mine inspection. Results accomplished by the inspectors shown by the improvement in mining conditions and the reduction in number of accidents. Depression in mining to be succeeded by great prosperity. Future of the Institute.*

Fellow Members of the Mine Inspectors' Institute of the United States of America:

This is the eighth annual conference of this Institute. It affords me great pleasure to have the honor of bidding you welcome to this meeting and especially to the City of St. Louis. I feel very grateful to George Hill, the Chief Inspector of Mines, and his able associates, in Missouri, for the splendid assistance they have rendered to make your visit here pleasant and I hope all may find it profitable.

## AIMS AND PURPOSES OF INSTITUTE

Owing to some changes in the membership of the Institute each year, it may not be amiss to state at this time some of the reasons why there should be an organization of mine inspectors maintained and meetings of this kind held yearly. The work of mine inspectors is the same everywhere and it makes no difference as to the length of time one has been in the service. His chief problem is: How can I as an inspector bring about a better protection of the lives and health of the men employed in and about the mines? By reason of such an organization as this much can be done that cannot be accomplished by the individual.

Our national and state governments are managed by organization. In fact, to accomplish any good results, whether political or otherwise, it must be done by having effective organization. Therefore, the reason is all the greater why we as mine inspectors should organize, having in view the adoption of such remedial legislation in our various states as shall bring about the best results. The public expect that mine inspectors, who have opportunity to acquire a more intimate knowledge of the various mining conditions, shall take the initiative in the promulgating of measures that will be the means of reducing the hazards in connection with the mining industry, so that it will be as safe to follow mining as any other line of industry.

## BENEFITS AND NEED OF ASSOCIATION

These meetings afford an excellent opportunity to bring about a closer relationship, or rather comradeship, than can be gained in any other manner. The discussion of the numerous problems that arise in one's daily vocation gives all inspiration and renewed energy, so that we go back to our respective fields of labor with renewed zeal and determination to give our best service for the good of those employed in and around the mines in our charge. The

mine inspector may be less conspicuous than other forces, in the service he renders for the good of mine employees; but his daily contact with the workmen gives him an influence that, if properly and intelligently directed, will be the means of bringing about better results for their welfare than all other agencies.

This statement is not made with the intention of minimizing the work that is being done by other organizations. I firmly believe that any organization that is engaged in the work of raising the standard of efficiency among mine workers should have the hearty endorsement of this Institute. It is true that we have connected with the mining industry a great many men of foreign birth who do not understand the English language, neither our methods nor our form of government. Therefore, any effort that is being made to develop skilled workmen where they are unskilled, and to instruct the unintelligent, is a laudable work and will reward one with the knowledge that his efforts have been the means of reducing the hazards and accidents in the mines.

## DEVELOPMENT AND IMPROVEMENTS

Mine inspectors who have been identified with the service during the last twenty years have reason to note the wonderful development and the many improvements made in the mining industry. With the larger number of men employed, the responsibilities and dangers attendant on mining have increased proportionately. Since our last meeting one year ago there have occurred three disastrous explosions in which over 400 lives were lost; namely, Hillcrest, Alberta, Canada (June 19); Royalton, Ill. (Oct. 27); and Layland, W. Va. (Mar. 2). None regret these dreaded catastrophes more than the members of this Institute. Knowing full well all the hazards and dangers connected with the rescue work, especially where there are many lives at stake, the sympathy of our members always extends to those inspectors in whose districts these disasters occur.

It is to be regretted that when accidents of this kind occur the newspapers often give incorrect reports, some of these being very ridiculous and of such a nature as to engender feeling between the officials of the different departments engaged in the work of rescue. The great work that devolves on all officials in their efforts to make mines as secure as possible against accident is one of the gravest of responsibilities and necessitates eternal vigilance. In time of accident or disaster, those whose duty it is to render all possible aid should bring all their experience and knowledge into immediate service. Friction should and must be avoided and diversity of interest obliterated where all are engaged in the noble work of saving those who are suddenly menaced in their hazardous calling.

The occupation of the miner is considered hazardous at the best, but many lives are often lost that could have been saved. The accidents that occur daily in mines are not due as much to the lack of legislation as to the lack of obedience and the closer observance of mine laws and regulations. Much work waits to be done by this Institute, and I believe that no men are better prepared than are the mine inspectors of this country to bring about

\*President's address delivered at the eighth annual meeting of the Institute, held in St. Louis, Mo., June 8-11, 1915.



better conditions and to advocate legislation that will better safeguard life and reduce the death rate and accidents in mines to a minimum.

#### REDUCTION IN NUMBER OF ACCIDENTS

It is gratifying to know that there has been a reduction in the number of fatal accidents in the coal mines of the United States during the year 1914, and with the exception of 1912 the death rate, per thousand men employed, is lower than for any year since 1903. In the year 1914 the number of fatalities in and about the mines was 2,451, which is 3.30 deaths to every 1,000 persons employed, or 4.80 to every 1,000,000 tons of coal produced, or one person killed for each 208,333 tons. This is the largest production of coal per fatal accident in this country, with the exception of that for 1912. There is no doubt but that the gradual decrease shown in the last few years must be attributed to the work of the many organizations having in view the prevention of accidents; and this applies not only to mines but to all other industries as well. But that we may have a reduction of accidents to a minimum requires that the work so well begun be carried forward, bearing in mind that eternal vigilance on the part of all connected with mining is necessary.

In looking over the statistics giving the causes of mine accidents it would seem that, with all our efforts, we have not been able to reduce the number of those due to falls of roof, coal and rock. The percentage of these accidents remains practically the same in all the states. Taking the United States as a whole, the proportion was 46 per cent., while in the state of Illinois, for the year ending June 30, 1914, it was 52 per cent.

I desire to draw your attention to what I consider the most dangerous work connected with the operation of mines, as shown by the number of fatalities due to pit cars and locomotives. In the United States the number of fatalities from this cause is 15 per cent., while in the State of Illinois, for the year ending June 30, 1914, it was 25 per cent. When we consider the number of employees engaged in this work, which varies from 6 to 8 per cent., these statistics show about one person killed for every 150 employed in that work.

#### MINERS CONSTANTLY TAKE CHANCES

I mention these matters for your consideration and ask you to suggest what this Institute should do in regard to reducing the accidents from these two sources. I think I am not overstepping the truth when I say that one-half of the accidents could be prevented if mine employees would live up to the legal requirements and carry out conscientiously the various rules and regulations governing their work, instead of taking chances by ignoring them. In this connection I may be pardoned for quoting a verse written by Berton Braley and published in *Coal Age* (Vol. 3, p. 711), entitled "The Gamblers." It runs as follows:

"We'll take a chance—we're not afraid of dangers,  
There's nothing killed us *yet*, so we're all right,  
To every sort of worry we are strangers,  
And so you see us, always gay and bright;  
Maybe some day the roof will fall and get us,  
The dynamite may go off in advance,  
The gas explode, but we won't let it fret us,  
We'll take a chance!"

I may mention, though with much regret, that the industry with which we are identified is passing through an era of depression such as it has not known for many years. In the State of Illinois alone, in which there are 80,000 mine employees, it is safe to say that not more than one-half have employment at the present time. The same condition prevails in many of the other coal-producing states, which means many hardships to the wives and children who are dependent on these men. However, when we think of the carnage of human life that is occurring among the European nations and that we, as a people, are at peace with all nations, we have great reason to be thankful. There is no doubt in my mind but that the present depression is a reflex of conditions that now prevail owing to the strife among European nations. I am sure it is the desire of all our people that there may be a speedy cessation of hostilities among the warring nations. I believe when that takes place this country will reap a greater measure of prosperity than it has ever known in its history. It is true that few nations, if any, excel this country in natural wealth and resources, and an abundance can be produced to supply the needs of all within its borders, and much to spare to the countries that are less fortunate.

#### FUTURE OF THE INSTITUTE

I wish to draw your attention to the fact that if this Institute is not accomplishing the results intended by having an association of this kind, the fault is entirely our own. I believe there is one object in particular that is preventing and proving a hindrance to its success as an Institute. I refer now to our failure to use it as a medium to reach the people and the governmental powers. Therefore I recommend that some steps be taken at this meeting that will require that a change be made in the constitution and bylaws of the Institute so that the subjects discussed and which appear to be of sufficient interest to the mining industry be given immediate publicity through the periodicals that publish matters relating to mining.

I want to suggest here that there will be less delay in the publication of our proceedings if all papers are sent direct to the editor in chief, who is their custodian, as provided by the constitution, and whose duty is to pass on all papers to be read and to prepare them for publication within 60 days after the adjournment of each annual meeting.

I know of no organization of men whose aims and ideals are more lofty than the men who make up the membership of this Institute. You have been selected by your states as men in whom they have the fullest confidence, believing that you will devote your time to the work of your office and require that every precaution be taken necessary to insure the health and safety of the men employed in the mines. There is no more laudable work than that in which you are engaged, and that is the preservation of human life.

**The Life of Mine Timbers** can be greatly lengthened by making a careful study of the character of the roof they support. With a strong roof and bottom, the timbering should be so set as to allow the roof to settle easily and gradually, or the floor to heave, thus preventing the waste of timber due to breakage which is sure to occur if the roof falls abruptly. With a strong roof and floor, loosely driven timbering and soft wood caps will prevent the bending and breaking of the timber. Tapered props, the small end of which is about one-fourth the size of the body of the prop, give good results and last longer than ordinary timbering.



# A New Era for Mining Towns

BY KARL B. LOHMANN\*

**SYNOPSIS**—The attitude of mine owners toward the planning and development of coal communities has radically changed for the better. The results of the application of scientific treatment to mining towns are greater self-respect and increased efficiency on the part of the employees.

Science and tradition both tell us that a pig was once an object of filth. He was fed upon waste. He breathed, slept and wallowed in grime. Otherwise, it seemed, he could not be happy—he could not live.

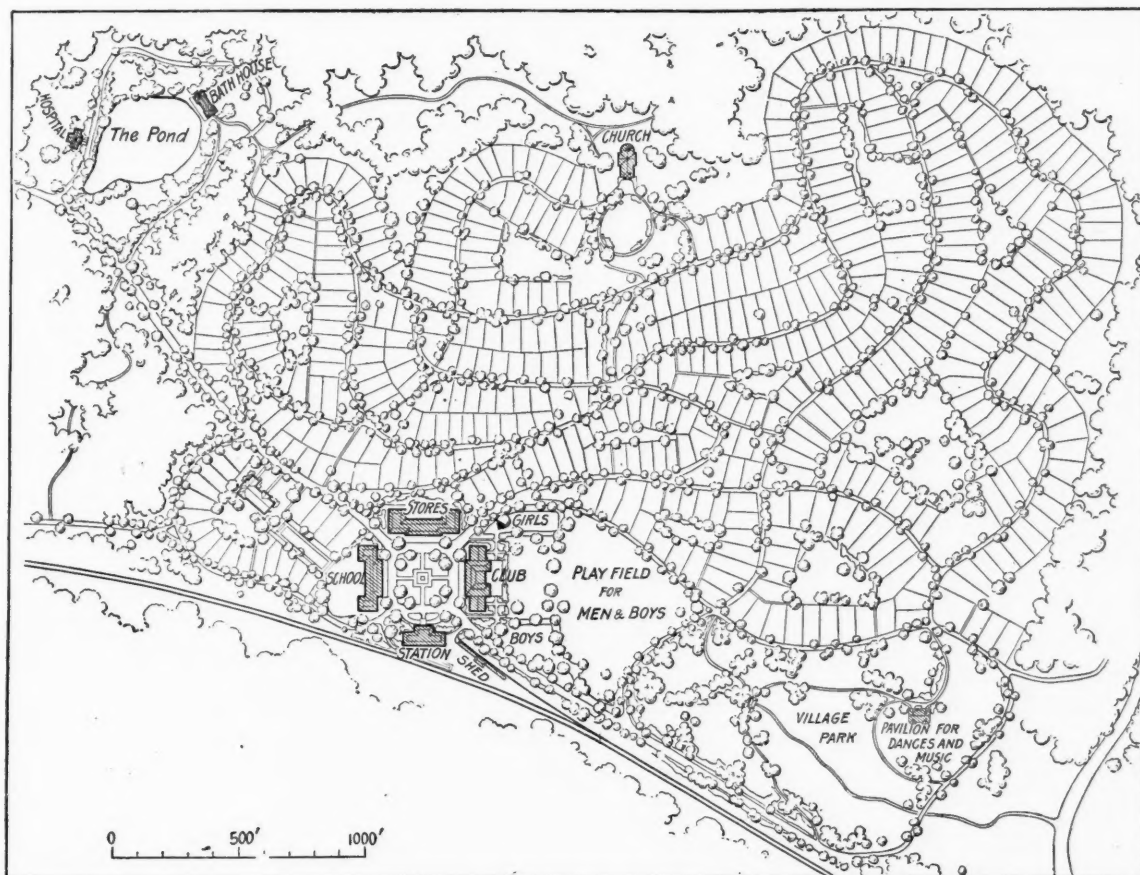
Time has changed his status, however. No longer do we find such prevailing filth in the pig's domain. We see him afforded good food and good air, and we find

imagined that in any other surroundings the workers and their families could not be happy. If we should give them bathtubs, they would use them for coal. If we should give them good streets, they would use them for ashes.

## GENERAL OPINION HAS CHANGED

Time, however, has also changed our attitude in this respect. We now behold a better day in the dawning for mining towns. We realize it in the prize awards by coal companies for better yards and gardens and the tender care of them; we see it in the frequently recurring better streets, and now and then, though rarely, in an entire mining community developed along advanced lines.

And well may it be, this awakening; for multitudes of workers and their families are yet to be huddled together



A SCIENTIFIC AND ARTISTIC PLAN FOR A MINING TOWN

him disporting himself quite merrily amid new surroundings. Indeed, his environment has been very much transformed. Yet it appears that not only can he live under the new conditions, but that he can live far better and live far more profitably to mankind.

In somewhat the same manner we have long been content at the sight of ill-planned mining villages, with their squalid shacks, inconveniently disposed streets, and desolate homes with unattractive surroundings. Recreation grounds were unknown, and the entire camp was symbolic of chaos and filth. We have for a long time

or pleasantly and conveniently provided for in communities still unborn. Mining towns are being built, and hundreds of others are in a process of improvement or of necessary extension and enlargement. Therefore the appropriate day for planning is not of the past, but rather eminently is of the present.

This impulse of a new dawn is fraught, however, with as much bad as good, unless it is properly guided. For instance, awakening civic consciousness, in its enthusiasm for improved cities, often is accompanied by and allows of too many unscientific and inartistic results. It is not because insufficient money is expended. It results prob-

\*Landscape architect, Wilkes-Barre, Penn.

ably from everybody thinking that he knows how to handle any given situation, together with an indifference to the advice of experts that is far too common. Similarly, in the planning of mining towns there is offered an immense scope for the poor taste of untrained individualism. Mine operators think that their engineering departments are just as perfectly capable of designing parks, gardens, villages and towns as they are of deciding upon the intricate problems of breakers and their accessories, as if town-planning were not a science in itself.

Be that as it may, whosoever is commissioned to design a mining-community extension or a brand-new development can never hope to accomplish it successfully, be he engineer or landscape architect, lest he consider it in a new, far-reaching light. His impulse must be guided by planning that is comprehensive, and this cannot be emphasized too strongly.

Comprehensive planning means primarily taking everything into consideration. It means leaving no stone unturned, whether it be engineering, architecture or landscape architecture. It calls for inclusive, encompassing planning. It presupposes a broad perspective over the entire community, a breadth of inter-relationships, a recognition of advance provision for things comprehensively needed, with due consideration of the bearing of one thing upon other things—that the parts are members of the whole. In short, it compels a full understanding of the entire problem.

#### GREAT RESULTS WILL BE OBTAINED

If the awakening impulse for better planning is properly guided, it may be expected to accomplish immeasurable achievement. For the present population who are now to enjoy its fruits, it will bring about added commodity and service. For instance, the men's work will be readily accessible. Their homes, in turn, will be accessible to each other. The community at large may possess in general the greatest number of conveniences available at the time of reasonable planning, such as water-supply, drainage, light, good soil, proximity to a through line of travel. There would be secured to the population ample health in provision for plenty of air, parks, playgrounds, trees along the streets and all preconsidered means of keeping the town clean.

Also, the dawn may illumine the way for better and more commodious environment that will help to conserve the moral and physical forces of the workers. There will be added pride in towns, in homes and in work. There will be an increasing solidarity of feeling in spirit with the companies. So that the crowning glory of any comprehensive planning efforts, from the company standpoint at least, will be an added contentment and efficiency among its workers.

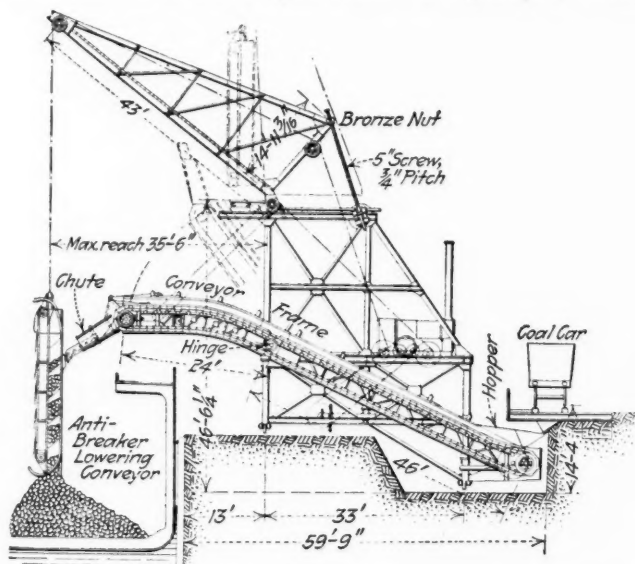
This much may be expected for the present population, for those who live in the communities now. Yet our efforts will not be unmindful of the future. Such comprehensive planning, such broad-outlook-into-the-future sort of planning, will result in more intelligent and adequate expansion of the community. New homes that will have to be built may become part of this same community and be co-sharer in its sometime advantages and developments. Any necessary extended streets will not have to cross a ravine or mountain. And every commodity and means for added efficiency in turn will be applied to the enlarged area of a later time, whether 5, 10 or 15 years hence.

Such planning therefore signals the approach of a new era for mining towns. They need no longer be pictures of desolation and squalor. Every yard, every street, every community is being touched with a new impulse—an impulse which by inspiring environment destroys the moral cause for much industrial unrest, which Americanizes and draws men into closer harmony with the employer and, most important of all, which brings the workers themselves ultimately to an added sense of their part in the great scheme of things.

### English Ship-Coaling Machine

A coal-shipping plant installed at Workington, England, is designed specially to handle the coal with a minimum of breakage. The machine is carried by a tower traveling on a track 120 ft. long near the edge of the dock, the rails having a gage of 33 ft. In the rear of this track, and above it, is a track for the drop-bottom coal cars, the coal being discharged between the rails and delivered to a hopper on the end of a conveyor frame, which extends through the tower.

The conveyor consists of a traveling belt of steel plates 4 ft. wide, running at about 120 ft. per min. The outer end of the conveyor frame is adjustable, having



MACHINE FOR COALING SHIPS, WORKINGTON HARBOR

trunnion bearings in the front of the tower, so that it can be raised or lowered to clear deck fixtures and to give the coal as little drop as possible. The conveyor and the propelling machinery are driven from a 40-hp. engine.

A chute on the end of the conveyor frame delivers the coal to a Handcock antibreaker. This is a vertical tube suspended from a boom on the tower, and containing a series of trays attached to endless chains. The weight of the coal as it flows into the tube operates this vertical lowering conveyor. The loaded trays descend, free the coal at the bottom, and then ascend empty. An automatic brake controls the speed.

In coaling a ship, the tube is lowered till its open end is nearly on the floor of the hull, and as the coal is delivered the tube is gradually raised, keeping its end level with the top of the coal pile, so that the coal flows out without a direct drop. This machine (described in *The Engineer*, of London, July 2) is designed to deliver 400



tons of coal per hour, but can work at the rate of 600 tons per hour. It was built by F. Turnbull & Co., of Newcastle-on-Tyne, to the designs of Cecil Walton, engineer for the Workington Harbor Board, and under the direction of Bowen Cooke, chief engineer of the London & Northwestern Ry.—*Engineering News*.

## Loose Mining Methods

BY ILLINOIS ENGINEER

The folly of loose mining methods is sometimes forcibly impressed on the mind of the operator in the form of dollars and cents. Such was the case recently when a surface settlement, caused by the removal of too large a percentage of the underlying coal, damaged property to the extent of at least \$7,000.

Had the rooms in the affected area been turned on the proper centers and driven on line, as is the practice in most mines in the same field, the trouble would probably have been avoided. As it was, no room sights were used; the result was that pillars of various sizes were formed. Where the thickness of the pillar permitted, additional rooms were turned off the crosscuts.

The profit obtained from the sale of the additional coal mined from the affected area by this haphazard method was approximately \$2,000. This does not compare favorably with the \$7,000 or more which will be paid out in damages. The handling of the additional inflow of water is another item of cost to be considered. Eight acres of an overlying seam  $4\frac{1}{2}$  ft. thick was damaged to such an extent as to be unminable. In addition to this, more coal will probably be lost in mining around the squeeze than was originally obtained by splitting the pillars.

The foregoing is a conservative estimate of the cost, but proves conclusively, at least in this instance, that loose mining methods do not pay. Risking expensive damage suits for the profit obtained from a comparatively few tons of coal is, in my opinion, short-sighted policy.

## Shipments to Upper Lake Docks

Receipts of coal at Milwaukee will have to be abnormally large during the remainder of the navigation season if the record of 1914 is to be maintained. Owing to the fact that the grain and iron-ore trades are practically absorbing all of the larger class of vessels and that higher freight rates will have to be paid as the close of season approaches, this is hardly possible. As a result the coal handlers will face the uncertain requirements of the coming winter with very moderate stocks. Should there be any hitch between the miners and operators next spring and the early movement by lake be delayed in consequence, the lack of supplies will be seriously felt.

Up to Oct. 1 of this year the receipts of anthracite coal aggregated 731,759 tons, or 14,875 tons more than was received during the same period in 1914. In order to equal last year's receipts of anthracite, arrivals during October, November and December will have to aggregate 318,402 tons.

The soft-coal shortage during this same period sums up 424,224 tons, the receipts aggregating 2,197,337 tons, as against 3,197,337 tons in 1914. Stocks will have to be augmented to the extent of 1,297,239 tons during October, November and December to bring the soft-coal shipments up to the level of 1914.

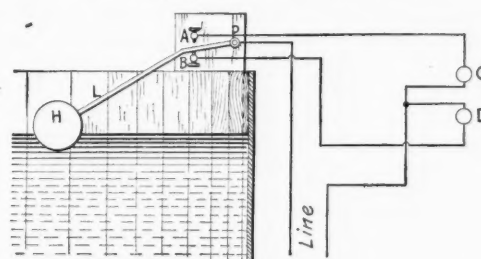
Every effort will be made on the part of coal companies to increase the supply, and the prospect is that the winter-storage fleet will be much larger than usual. Dealers report that coal is moving out more satisfactorily and that business in general has a promising aspect.

## Signal for Water-Supply Tank

BY C. J. FUETTER

Now that cold weather is soon to be with us again every power-house engineer who has to look after a water tank placed on a hill to supply water to the town knows how unpleasant it is to go out of a warm engine-room to find out how much water he has in the tank. Many such engineers let the pump run most of the time at full speed, in which case it generally happens that the tank overflows.

This is a waste of power, for at a small cost a signal system may be installed that would take care of the water-supply. Such a system is shown in the accompanying sketch. It is designed to work on either a 110- or



SIGNAL FOR WATER-SUPPLY TANK

220-volt circuit; however, should only 550 volts be available, two 250-volt lamps in series at *C* and two at *D* would be all the changes necessary. *H* is a hollow ball made of copper. It may also be made of cork.

This ball is fastened at the end of level *L*, which is pivoted at *P*, its rise or fall completing the circuit of *C* and *D*. If rising, *L* makes contact with the adjustable screw *A* and will light lamp *C*; if falling, it makes contact with *B* and lights the lamp *B*. The last mentioned lamp should preferably be red. A means must be provided so that any undue rise will not bend the lever. This may be accomplished by using contact springs instead of contact screws. It might be well to solder a small piece of silver at the contact points *A* and *B*. Lights *C* and *D* should be so placed in the engine-room that the engineer's attention will be readily drawn to them.

Should no current be available, the signal could be arranged to work with bells, by placing 4 or 5 dry-cells across the lines, with a small bell at *C* and another at *D*. Of course the ring of these bells should have different sounds so that the engineer will know whether the water is high or low, thus indicating to him whether he should slow down or speed up the pump.

## New Coal Fields in Manchuria

New coal fields are reported to have been discovered near Station Manchuli by the local chief of police, says *Commerce Reports*. The fields are located about 5 mi. from the Station Manchuli and 2 mi. from the railway line. The discoverer has offered to sell his right in the deposits to the Chinese Eastern Ry., which is investigating the amount and quality of the coal.



## Pennsylvania State Tax Upon Anthracite Invalid

*SYNOPSIS—The Supreme Court of Pennsylvania has reversed the decision of the lower court and has declared the imposition of a state tax upon anthracite as unconstitutional under the conditions specified. The decision will cause much confusion in making refunds. The State Legislature has already taken action toward the enactment of a law that will meet with the approval of the Supreme Court.*

The Pennsylvania State Supreme Court has declared the legislative enactment of 1913 levying a tax of 2½ per cent. per gross ton on the value of anthracite coal at the mines to be unconstitutional. The case reached the Supreme Court on an appeal by the Alden Coal Co. against the decision of the Court of Common Pleas of Dauphin County, which declared the act constitutional and rendered judgment in favor of the state against the coal company for \$7,792.86, being the amount of taxes assessed against the Alden company for coal mined and prepared for market from June 28, 1913, the time the law became effective, and ending Dec. 31, 1913. In the decision of the Supreme Court, which was written by Justice Stewart, the contention of the appellants is upheld in the following words:

### TEXT OF THE DECISION

"When the necessary effect of the legislation is to create inequality of burden as we here see it, are those complaining of the injustice to receive no other answer than that, while the Constitution promises them equality in the matter of taxation, because it failed to place restriction upon the Legislature's right to distribute the tax it collects therefore the purpose of the legislation is not to be inquired into? If constitutional requirements are to be circumvented by such simple and easy process of reasoning, the question may yet be asked derisively of the Constitution, 'What is all this worth?'"

While the case against the Alden Coal Co. only involved the collection of less than \$8,000, it was purely a test case involving almost \$10,000,000, which represented the tax on coal under the act of 1913 up to July 1, 1915, when a new act passed by the Legislature the past summer became effective.

The suit was brought to test the constitutionality of the act and resulted in Judge Kunkel of the Common Pleas Court of Dauphin County declaring in favor of the act. It was the appeal against this decision that has just now resulted in the reversal of the opinion of the lower court.

### BASIS OF THE DEFENCE

The attorneys for the coal interests declared from the very inception of the law that it was special legislation. They based their contention on the fact that while anthracite coal was mined in only nine counties of the state, a proportion of the whole tax was to be distributed in such a way to those nine counties that the cities, boroughs and townships in those counties would share in

the distribution, even though no coal was produced in a number of the cities, boroughs and townships. This contention has now been upheld by the Supreme Court, from which there is no appeal to any other court, not even to the United States Supreme Court, which usually at some time or other gets the coal cases. This is for the reason that the present case was brought to test the validity of a state law involving a purely state transaction.

It is well to note at this time that the State Legislature of Pennsylvania passed a new anthracite tax law at its session of 1915, and the present court decision only covers the levying of the tax under the old act of 1913, the new law becoming effective with July 1 of the present year. While this present decision cannot directly affect the act of 1915, it is practically certain that it will now get its day in court. The chances are that it will follow in the way of its predecessor, as the only difference between the two was in the matter of readjusting the proportion to be received by the state and the coal-producing counties.

It is also interesting to note that at no time during the progress of the present suit was the right of the state to levy such a tax on coal of any kind questioned. The suit was practically fought on technical grounds as relating to its accordance with the Constitution.

It hardly need be mentioned that if the act of 1915 is also declared unlawful the next legislature will take steps for the enactment of a law that will comply exactly with the ruling of the Supreme Court. So it can be seen that the coal man's respite may not be a very long one.

### REFUNDS TO THE DEALERS

Probably the most interesting phase of the decision will develop when the retail dealers and large consumers begin to ask the producing companies for a refund of the increased price or tax which they have had to pay for coal from June 28, 1913, until July 1, 1915.

At the time the law was announced as becoming effective some of the operating companies, such as the Philadelphia & Reading Coal and Iron Co. simply issued a price circular showing the prices at the mines and then added a note to the effect that prices would be subject to the Pennsylvania state tax of 2½ per cent. on the mine price. Other companies, however, such as the Lehigh Valley Coal Sales Co. and the Lehigh Coal and Navigation Co., simply calculated the tax into their circular prices. In this latter case these companies would have been actually paying tax on their tax, for the reason that the circular prices were the prices for the coal at the mines and it was on the mines price that the tax was to have been collected.

Those dealers who bought their coal from the companies that added the tax as a separate item will at least have no difficulty in making up and presenting their claims, as on all the bills rendered by the companies adopting the first-named plan the tax was always shown as a separate item.

But the still greater question arises, Will the companies all refund to the retail dealers? And if some should be inclined to the contrary, is there any way to

compel them, especially those companies that sold at a lump price with no specific mention being made of the tax as a separate item? The retail men certainly expect a refund. Of course there are any number of instances, especially among the larger dealers with whom agreements have been made as to an adjustment, but these cases are by no means common.

#### CONSUMERS TAKE ACTION FOR A REFUND

The actual consumer of the coal constitutes still another angle to the problem. In Philadelphia, for instance, purchasers of coal from the retail dealers have been paying an advance of 25c. a ton on their coal, which the dealers generally explained was designed to cover the tax and also increased operating expenses. The decision of the court was not a day old before the consumers in this district began to figure on just what amount of money was due them from their dealers, and they at once began clamoring for the refund. The first actual step in this direction was instituted by a coterie of the large consumers in the fashionable Main Line residential section, who have consulted attorneys and are going to make a concerted demand on the dealers for a refund.

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#### Extracts from a Superintendent's Diary

James Lang, an old Scotchman whom I have not seen for about 10 years, drifted into camp today in search of work. Had he known that I was superintendent he would have felt sure of obtaining work because he knew that I must have a warm place in my heart for him (one cannot forget the old fellows who take the trouble to initiate one into the mysteries of practical mining, and the old fellows realize that full well, no matter what kind of old fellows they may be), but he did not know that I was the superintendent—in fact, could not have known that I was superintendent at any camp. When we parted company, I was a mining engineer one year out of college and he was a miner in disgrace because of a clash with a superintendent.

He has apparently never recovered from that stroke of bad luck, while I attribute most of the success that I have had since then to the train of thoughts started by his discharge. I had learned to know him so well, the hard-headed old Scotchman who loved poetry, that I felt that any mining camp could use him to its advantage, and that made me feel that our superintendent was at fault in not knowing how to handle him. My interest was aroused to a point where I could not get the subject off my mind until I decided to my own satisfaction just how the superintendent had blundered.

My friend James was a great admirer of Longfellow, and one line of the poet was on his lips at least once every day—it was the line from the "Psalm of Life" that admonishes men to be not like dumb driven cattle. My interpretation of that line caused the final break with his boss.

Our superintendent could not understand why miners had occasion to gather continually and discuss things of common interest, and he was forever trying to discourage such meetings and made no secret about his opposition to them. At first the meetings had been rather informal and really did not mean much to the men,

but when the men began to realize the attitude of the boss toward their gatherings, they began to make them count for something. James Lang was a pretty fair talker to say the least, and spurred on by the idea that he was being classed as a dumb beast, he made his oratorical powers felt. The superintendent could not distinguish between a philosopher and an agitator, and the philosopher soon became a full-fledged agitator, and as a result was asked to leave.

About the same time one of the neighboring camps had a strike, called because the superintendent was opposed to the miners having a checkweighman, and the strike was continued until the superintendent backed down. After that the miners at that camp lost interest in the checkweighman issue and before long could not get a majority of the men out when it came time to elect a new one.

These things happened a number of years ago; but in judging of recent events that have occurred all around our camp, it would appear that human nature has not changed very much since then after all, and men are just as anxious now to do things just because some one wills differently as they were then.

I find that James Lang is still repeating the "Psalm of Life" on the slightest provocation, but he has still not learned its true meaning; and try as I might I was not able to recall those old days to his mind in a manner to gladden his spirits. I have not lost hope, however, and if the wanderlust does not again get control of him too soon, I feel that I will have a chance to repay in part the debt I owe him.

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#### Revision of Mining Laws

A convention that will act on recommendations regarding a general revision of the Federal mining laws will meet in Washington, D. C., Dec. 16. Some of the resolutions that will come before the convention will recommend the fixing of a reasonable term of years beyond which placer claims shall be immune from attack on the ground of fraud, full privilege of appeal in all cases of contests over locations, recording of notices of mining locations so as to insure public notice, the abolishment of the law of apex and the appointment of a Government commission under an act of Congress to investigate and to make recommendations as a basis for the revision of the mining law.

All the known mining societies in the United States have been asked to send delegates, and it is the intention that the mining industry will be so well represented that the action of the convention will be regarded as expressing the wishes of the industry.

#### COMING MEETINGS

**Illinois Mining Institute** will hold its annual meeting on Nov. 20, 1915, at Springfield, Ill. Election of officers will be held and the day will end with a banquet.

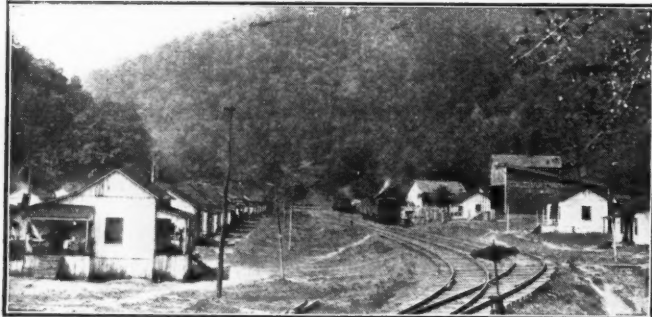
**The winter meeting of the Kentucky Mining Institute** will be held this year at Lexington, Ky., on Friday and Saturday, Dec. 3 and 4, 1915. The program is not yet completed. The following committees have been announced. Committee on papers: J. E. Butler, Stearns, Ky., and Ivan P. Tashof, Lexington, Ky. Committee on entertainment: Professor C. J. Norwood, Edwin L. Quarles, R. D. Quickel, Milton Sanchez and Ivan P. Tashof.



## Snap Shots in Coal Mining



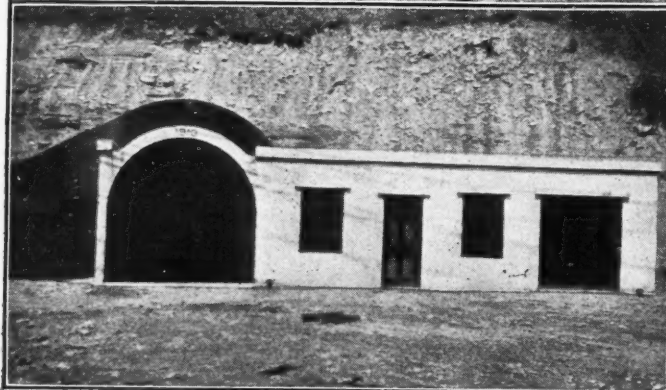
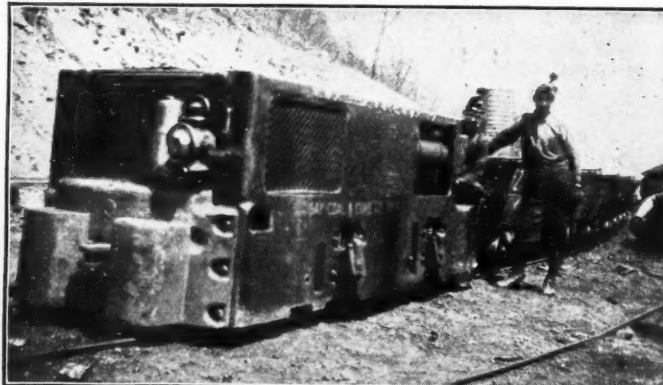
MINERS' HOMES, UNION PACIFIC COAL CO.,  
RELIANCE, WYO.



COMPANY STORE AND HOUSES, COLEMAN MINES,  
BLANCHE, KY.



A BED OF COAL IN EASTERN KENTUCKY, KNOWN AS  
NO. 6 SEAM



VIEWS IN SOUTHERN WEST VIRGINIA

Gasoline motor, Gay Coal Co., Logan. Tipple and washery, New River & Pocahontas C. C. Co., Berwind. Mine fan  
U. S. C. and C. Co., Holden. Miners' hospital, Welsh



# The Labor Situation

**SYNOPSIS**—*Frank P. Walsh will act as attorney for Alexander Howat, president of District 14, in suits against J. H. Hazen. President White appoints the officials for District 21.*

Some time ago it was alleged that in making the contract between miners and operators in District No. 14 in 1910 and 1912 a large amount of money was raised by the latter and it was suggested that Alexander Howat, the president of that district, and Fred W. Holt, the secretary-treasurer, received about \$20,000 of it.

The operators in question formed the Southwestern Coal Operators' Association, and they are alleged to have assembled a fund of \$100,000 by assessing the members of that organization. Charles S. Keith and James Elliott were at different times at the head of the association. Franklin Bache was at one time a member, but he left the organization and brought suit against Charles S. Keith for an accounting. In reply Keith declared in court that he had been informed by a detective of the name of Holmes employed by the association that contracts could not be made unless money was used.

## Union Officials Said to Have Received \$11,250

According to Keith's testimony, it appeared that the detective quoted Alexander Howat's remark that Thomas Lewis and John Mitchell had received money to make contracts and that he proposed to get his before he would arrange for a settlement. Consequently, according to the same testimony, Keith transferred the sum of \$11,250 to Joseph H. Hazen to procure the signing of the contract. Under the terms of the arrangement \$100 per month was to be turned over to Hazen for another purpose. Keith likewise testified that Hazen told him that he divided the \$11,250 between Howat and Holt and that the \$100 per month was paid to Howat during the time the contract remained in force.

It is clear that this testimony severely compromised Howat and Holt and the whole United Mine Workers of America, and Alexander Howat himself wrote to John P. White asking for an investigation on Mar. 29, 1914, just at the time that the head of the organization was busied with the making of the biennial agreement. J. P. White, in order to clear the air, required Howat to bring action for slander against those who had made these statements. This action recalls one by John Mitchell when Mother Jones was accused of certain nefarious crimes. He told her to defend her reputation or sever her connection with the union, and as a result she for a long time did the latter. In both cases the persons accused were offered the free services of an attorney to enable them to prove their case.

Of course Keith, in giving his testimony, was defending himself. He was not trying to defame the union, and consequently it would be hard to make a successful charge of slander against Keith. Hazen, however, is thought to be open to a suit, though he himself was testifying in defense of Keith and on the order of the court. The ground for trying Hazen rests on the statements of Keith, Jenkins, Hardin and others to the effect that Hazen declared that he had given the money to Howat and Holt. Even if this was untrue, it was hardly a slanderous statement, for he apparently said it not for the malicious purpose of hurting those union leaders, but in explanation of what he did with his money.

## Hazen's Courtesies Are Thought to Indicate Graft

The attorney appointed by the organization was N. E. Kendall, of Albia, Iowa. He went over the matter with his client, Alexander Howat, and pointed out to him as in duty bound the weakness of his case against Hazen. It seemed to him as he stated later, Oct. 26, 1915, that the case was in some ways quite weak, just as has been explained; but it seemed that there was a further difficulty, and that arose from the evidence of a long-continued friendship between Hazen and Holt. They had been out together to lunches and dinners and on automobile rides and had finally gone to Chicago to see a ball game. It is unfortunate that representatives of labor and capital when they meet must shout their terms to one another from behind trenches. If they exhibit any friendship, both sides and even juries believe that there is some crooked deal in progress.

It is easy to imagine the feelings of Howat when his lawyer told him he had no case. Innocent or guilty, he may

have believed that Kendall was no man to conduct his business. He chose J. I. Sheppard, of Fort Scott, Kan., and that attorney refused to have Kendall or anyone else whom the organization might appoint, as an associate in the case. J. I. Sheppard, in his statement on Oct. 26, declared that Kendall's appointment as attorney, or the naming of him or anyone else to interfere with Sheppard's conduct of the case, was a "frame-up" of the organization. In fact, Sheppard looks upon everything in that ungenerous light. He says that the case between Bache and Keith was nothing else, though every evidence is that it was the outcome of some of the bitterest feeling. As an evidence of the artificial character of the proceedings against Keith, Sheppard showed a certified copy of the dismissal of the suit Sept. 26 of this year.

## J. P. White Submits Three Separate Plans to Howat

White advised Howat to resign. Howat did so, but attempted to run again for the office, and White opposed the placing of his name on the ballot. A conference was called for Oct. 26 to which the public was admitted. White, Kendall, Sheppard and Howat all discussed this issue, and then White made his proposition. He would appoint Frank P. Walsh as sole attorney if Howat would accept him or he would leave the selection to the four district presidents of the United Mine Workers, or if Howat was ill-disposed to the "capitalistic courts," then White would be willing to see the matter settled in the "courts of our own organization, the international convention which convenes at Indianapolis, Ind., on the third Tuesday in January, 1916."

Ultimately an agreement was signed by which White permitted Howat's name to go on the ballot; Howat accepted Walsh as sole counsel; and White conceded that Walsh should accept Sheppard's services if he desired and that Walsh should be paid by the international organization.

## White Takes Complete Charge of District 21

But Kansas is not the only section where there has been confusion. President White has had to take charge of District 21 in Oklahoma, where there is serious internal trouble. The State Mine Workers' Convention at McAllister, Okla., approved his suggestion that he take charge. He has designated the following officers to act for him until relieved by their successors, who are to be chosen at an election to be held within 45 days: President, William Dalrymple, Coalgate, Okla.; vice-president, J. B. Winters, Montana, Ark.; secretary-treasurer, Herbert B. Long, McCurtain, Okla.; executive board: Edward Cunningham, Bridgeport, Tex.; Thomas Sexton, Jenny Lind, Ark.; Ira Decker, Bryant, Okla.; P. R. Stewart, Hartford, Ark. It is understood that none of these men will be candidates for reelection. The auditors and members of the joint board of the district will remain in office by general consent till after their successors are appointed.

## Illinois Miners Drive Militiamen from Mines

Warrants have been issued against Walter Abrams, George Karns and Festus Haley, pit committee in a Hillsboro mine in Illinois, charging them with interfering with workmen because they belong to the militia. The complaining witnesses are Charles Carter, Charles Hill, James Knox, Kleth Hudspeth and James Dugan. When they returned from a state encampment of the militia, the committee refused to allow them to return to work, and charges were preferred against them in the local union and they were suspended. On the advice of Adjutant-General Frank S. Nixon, the men made application for reinstatement, but their request was tabled. The law provides a penalty of \$500 for interfering with or discharging a workman because he belongs to the militia. A test case is to be made by the National Guard officers.

## Report of Relief in the Hocking Valley District

A report has been filed with Governor Willis relative to the relief work in the Hocking Valley District of Ohio. In it Col. Edward C. Bryan, assistant adjutant-general, states what the department has done to aid the miners and their families. In all, 12,764 persons were assisted and 17 carloads of food supplies were sent to the district for distribution.

In addition there were 30 miscellaneous shipments of supplies. The food was distributed from commissaries established at Nelsonville, Chauncey, Poston, Congo, Orbiston, Glouster and Lathrop. The financial statement of Colonel Bryan shows that the sum of \$13,142.54 was spent for food, the Cleveland chamber of commerce donating \$1,000.

## Editorials

### Anthracite Miners' Demands

It is quite probable that when the time comes to discuss the proposed change of wage in the anthracite region someone will industriously dig up the average cost for mined and washery coal in 1909 as given in the United States Census Report—namely, \$1.34 per long ton—and then calculate what a 20-per cent. increase on that figure would mean. He will advance the argument that a 27c. increase in the price of coal will provide the companies mining anthracite with all the return necessary to make the needed increase to their men.

But first of all it must be remembered that the demands are not limited to a simple increase in wage. The day laborers are asking for an 8-hr. day, and *Coal Age* hopes they will get it. But this is quite likely to result in an increased cost. It may be possible to hope that the men will speed up the work and put all the work in eight hours that has been strung into nine hours or more, but it is easier to hope this than it will be to secure it.

In the miners' demands there is no promise of that kind. Unfortunately there is only a surly, "We demand," and there is no evidence that with it is combined the promise, "We concede that we ought to do a full day's work in eight hours." If it can't be done, then surely the operator has a right to ask a further concession from the public for the time lost—a concession which must be figured on the domestic sizes and not on the coal as a whole, just as must be the increase in the ton price and in the day-wage rates.

Nor in regarding the problem must we forget the new demand for extra pay for overtime and holiday work. Consideration of both these is unfortunately necessary, for much work has to be done when the mines are idle by men who normally are employed during the day. In fact, inducing the operator to do much of his repairing and construction wholly during specified hours is to make it only more certain that the regular day labor will be interfered with, making it less possible than before to do the day's work in the time formerly devoted to it and still less feasible to do it in the shorter time provided in the schedule. It will also tend to interfere with the miner and make it harder for him to put out his daily quota. However, this is less important, as the present output certainly does not represent his full ability to produce coal. And yet it must be conceded that this interference is important to the miner, for he will often go home rather than wait till the difficulties delaying his work are adjusted.

These two items—greater cost of overtime and shorter hours of day labor—must be remembered in weighing the increase in cost of coal, and the figuring on them is left to the last because they are somewhat elusive and not at all because they have no legitimate weight. The two demands are important and might with some of the companies be found to involve an increase of 20 per cent. in day wages in addition to that directly demanded.

It will apply of course to the day workers only. But it must be remembered that the day men, though not as well paid as the miners, constitute a large percentage of the gross number of workingmen in the anthracite region. One-third of the men employed by the anthracite operators are day hands. Roughly each working unit—miner and mine laborer—makes necessary the services of one day hand.

Since the Census Report of 1909 the wage agreement of 1912 has secured for the miners an increase of 10 per cent., but the sliding scale established in 1902 after the great strike was by consent abolished. This sliding scale was  $4\frac{1}{2}$  per cent. higher than the basing rate, so that the increase in 1912 was only equivalent to a raise of  $5\frac{1}{2}$  per cent. This would make the labor cost of producing anthracite at the present time \$1.37 per ton.

An advance of 20 per cent. would mean therefore an increase of 27.4c. per ton, which on the production of 81,000,000 long tons in 1914 would amount to nearly \$22,000,000. But of this total production approximately 8,500,000 tons was used in the operation of the mines and about 19,000,000 consisted of buckwheat, rice and barley, sizes which were sold in competition with bituminous coal. The price at which these steam sizes of coal are sold cannot be advanced unless the bituminous competitors are obliged to make a like concession, so all the adjustment must be on the prepared sizes. Steam sizes find competitors in the bituminous coal output of the country, but the domestic trade in anthracite is faced only with the far less important competition of coke.

As the prepared sizes amounted to only about 53,000,000 tons in 1913 the increased cost of \$22,000,000 must be spread over that tonnage, thus adding 41.5c. instead of 27.4c. per ton to the selling price. As stated, however, a third of the men are asking for a rate which might be equivalent to another 20 per cent., and if every demand were granted, an increase of 57c. per ton might be necessary to satisfy the demands of the miners.

But in all this calculation the item of salaries has been overlooked, and indications are not wanting that the men who are paid by the month will expect an increase of remuneration. Some in the past have regarded themselves as subject to the increases in wages granted in wage adjustments and have demanded increased pay through the Anthracite Commission. It must be remembered that "salaries" in the census returns "includes all payments to officials, superintendents, managers and salaried employees in general offices, as well as the payments to salaried employees at the mines." So, clearly the 6.33c. per ton for this item would add \$5,127,300 to the bill. Spread over 53,000,000 tons of prepared sizes, the additional cost will be 9.6c. per ton. Consequently we may find that about 67c. and not 27.4c. is the correct answer to the momentous question, "How can the mine workers' demands be satisfied by a rise in the selling price of anthracite?" And it is fair to ask if the public is willing to pay the rise in price thus involved.



## Why Set the Living Wage?

A certain brilliant German ophthalmologist, Von Helmholtz, declared that if a normal human eye were sent to him by an optician he would be disposed to return it because of its obvious defects. As a matter of fact, eyes, even the best of them, are not perfect. All of them have a dark spot, a certain degree of astigmatism, a limited range of focus, chromatic aberration and other faults, and doubtless Von Helmholtz would advise that eyes would be more effective if put farther apart so as to increase the breadth of view of objects seen at a near range.

But Von Helmholtz's remarks relative to a model eye have attracted little attention. Eyes are as we find them, defective or otherwise. We may imagine other eyes with greater powers of accommodation, with a spotless retina, without any astigmatic imperfection, but such visions serve no useful purpose. We are face to face with conditions as we find them.

The living wage is an abstraction like the perfect eye. What we mean by a living wage is not the minimum with which it is possible to hold mind, body and soul together, but a wage promising the recipient a certain degree of comfort for himself and his family. No one will doubt he can in some manner live on less. In fact the living wage proposed by the investigators would provide a certain more or less perfect condition of affairs and rebuild the world, just as Von Helmholtz would remodel the eye. But we are face to face with economic conditions in the one case, just as we are confronted with the eye of biology in the other.

Is there economic room for every individual to enjoy that particular "living" wage which happens to be popular (for even the advocates of this manner of determination admit that the standard varies not only with the cost of necessities, but with the nature and quality of the necessities included in the bill of particulars)? That is the really important question—not What do we want? nor What do we think is desirable? but What conditions actually exist? We live in a plain workaday world in which ideals must always be circumscribed by realities.

Something must be put aside year by year to provide new capital, but if everyone obtained an approach to the living wage advocated, it is certain that not only would there be nothing added to the national resources, but year by year these would be depleted.

What is needed is a general increase of efficiency, both in the work done per day and in the number of days worked. Neither employer nor employee is doing his full part to secure that end. When it is done, the living wage proposed will be readily secured, because the wealth of the world will be able to satisfy it. But meantime a new living wage scale will be elaborated behind which the provisions of our economic status will continue to lag. Quite obviously does our living wage change. No one will deny that an investigator would arrive at a much larger figure if he were determining the cost of living for Americans than if he were assessing it for Bulgarians, for instance, even if prices in both countries were the same.

Wages must be regulated always by the output of labor and by the amount of that labor that we desire to have fixed annually as capital, and they can never be wholly determined on the basis of our wishes or imagined needs. The individual economic status is, like the human stature, not to be modified by our wishes or our fears.

## May Change Anthracite Sizes

At last a movement which promises to afford a long-needed relief to anthracite coal buyers and dealers and the transporting lines, as well as a reduction in preparation costs to the producers, seems to have assumed definite proportions. This movement is one established to readjust in a radical manner the now too-numerous hard-coal sizes.

According to rumor, conversations between operating companies have so far progressed that it has been determined that the change in sizes is not only feasible, but that it will conform with the needs of consumers. Certain sizes have been in such great demand in some seasons that the production has not been in any way adequate to the filling of the orders, and it will therefore not surprise the selling public if a change should be made at any time.

So far only the operating officials of the anthracite industry have discussed the matter, and naturally these men lay particular stress on the simplification in preparation methods and equipment which will follow the new schedule of sizes if adopted. It is expected that the selling companies and agencies will soon be consulted and that they in turn will "converse" with the buyers and dealers to ascertain how the idea will strike them and their public.

The second party at interest in the proposed change would be the transportation lines, which are now too frequently congested in their efforts to move trains containing cars laden with eight different sizes. For these different cars have to be dropped at various stations or dumped at the piers in a very different order from that in which the train is made up. In making up trains alone, much valuable time would be saved the roads and ultimately the coal buyer by a reduction of the number of sizes.

The coal dealers will be the chief gainers, because where they now must in most instances stock eight sizes of anthracite coal or more, some smithing coal and a couple of other hard or soft fuels, the anthracite sizes they would carry in the proposed plan would be only four. These sizes, too, would more nearly fit the consumer's requirements, and a slight reduction in prices on some sizes and no anticipated advances should make the movement popular with all buyers.

Tentative plans embrace the adjusting of broken and egg sizes into one, to be known perhaps as furnace; stove coal to remain as at present, but probably to be called small furnace or large range; chestnut and pea coal might be combined into a uniform size that could be called range; buckwheat No. 1 should remain unchanged, on account of its being known as the poor man's fuel in some sections and the economical man's coal in other places; rice and barley coal may be mixed as steam coal. It is also added, as the propaganda goes around, that the operators can further economize in their own fuel consumption by using pulverized culm, as is done at the Hauto plant of the Lehigh Coal and Navigation Co.

Economy all the way down the line is the sole purpose of the whole plan—for the producer, carrier, buyer, dealer and consumer. Thus far it must be remembered, however, that, in the language customary to the daily press, the affair has not progressed beyond the conversational stage, though it is to be hoped that action will result.



## Sociological Department

### Annual Fete Day at Ellsworth

By R. Dawson Hall

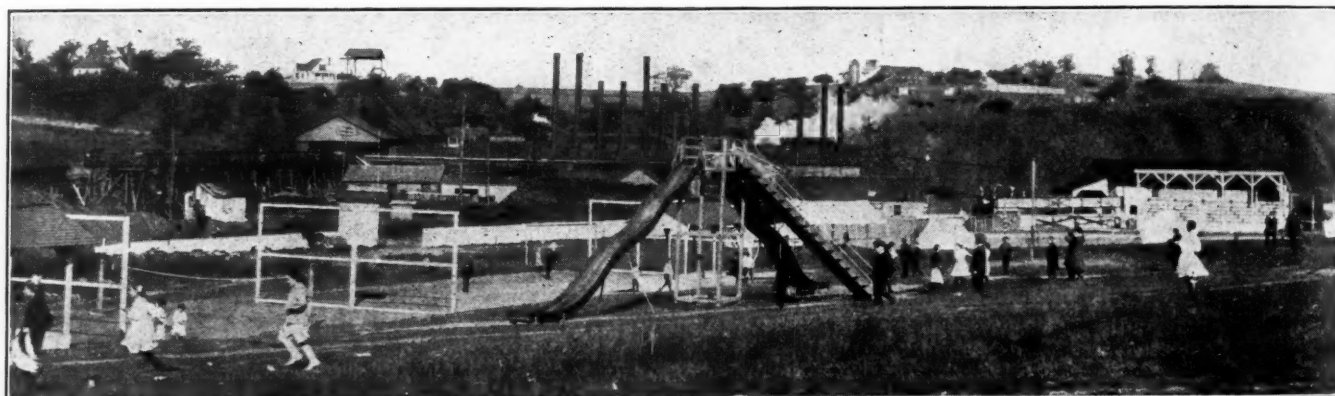
*SYNOPSIS—Ellsworth's great annual festivity is not exactly duplicated anywhere else in the country. In no other coal-mining town are all the social activities so skillfully coördinated. The pupils at the school, the foreigners in the folk dances and the miners in their first-aid drill all regard the day as their own.*

The fête day at Ellsworth officially goes by the title of the Annual Mine Safety Demonstration of the Ellsworth Collieries Co., but it is badly named for several reasons, for it is now by no means merely a mine-safety meet such as we are all acquainted with and have seen

the child to the full-grown man to contribute his mite to that end. Furthermore, safety is only first at best and not the sole end of life. There is still room for happiness and intelligence as an aim of living, and in Ellsworth and Cokeburg, these good things are being sought and the way in which they can be attained is being illustrated.

#### KINDERGARTENS, NIGHT SCHOOLS AND MANUAL TRAINING

At 10:17 o'clock the train arrived from Pittsburgh with the special car containing the mine officials and the guests of both sexes. This was followed by an inspection of the Ellsworth school, an institution which is remarkably well organized. E. E. Bach is the superintendent of both the Ellsworth and Cokeburg schools. J. W. Sprouls is principal of the former school, and he has two male and seven lady assistants in the regular school work. At Cokeburg,



THE POINT OF VIEW FROM WHICH THE ELLSWORTH CHILDREN REGARD THE COAL-MINING PLANT

almost at every place where there are coal mines. Then again the Ellsworth Collieries Co. can hardly claim it, for it seems to be the private and exclusive property, not only of the managers of that company, but of every child in the Ellsworth schools. Many of the scholars too young to know the name of the beneficent company providing the fête day and even unable to recognize the men in charge of the festivity nevertheless will look forward to its recurrence and will recall the day with pleasure.

The company has so far succeeded in making the work so popular that its own action seems to fall naturally into the background. This was only the fourth annual fête day, but already there is hardly any room now for further development and improvement within the limits of a single day.

The demonstrations may have originally been instituted to press forward the first-aid idea, but the sociological superintendent is a teacher and not a doctor, and he has consistently brought forward the educational features and done it most successfully, for he has all those qualities which made Froebel and Pestalozzi so useful to their fellow men.

After all, if we get safety in the mines we will arrive at it largely by education and by inducing everyone from

a town about 3 miles from Ellsworth, the principal is E. C. Snyder, and he is aided by five lady assistants.

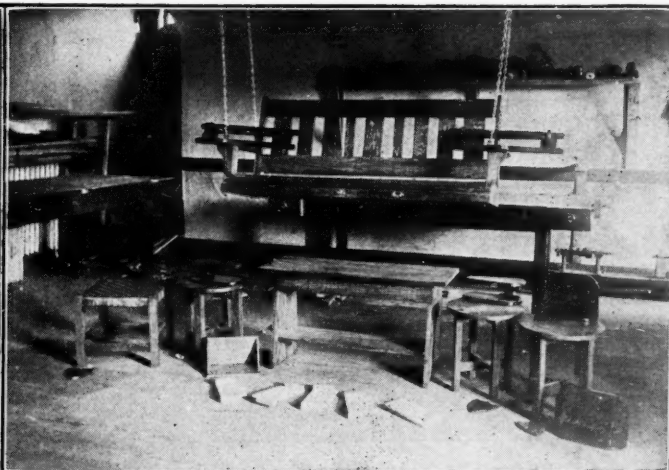
But despite the excellence of these provisions for the children there would be nothing remarkable were it not for the work of the special departments and the night school. In the daylight schools Margaret Mooney teaches household arts; George C. Donson, shop work; Edith McComb and Edith Blythe are instructors in the kindergarten. The playground is supervised by the household-arts director, Miss Mooney, and the two kindergarten instructors, Misses McComb and Blythe. Dr. G. H. Smith, with Alberta Campbell, takes care of oral hygiene.

The night school has the following instructors: Mining technology, M. D. Cooper; mining law, D. E. Smith; English for foreigners, John Docktor; household art, Margaret Mooney; stenography and typewriting, Dora Little; shop work, George C. Donson; common branches, E. E. Bowman, and English for foreign women, Ethel Cablk. In the continuation school Ethel Cablk has a class in sewing and fitting.

The scholars were not given a holiday in the early morning of the fête day, so the pupils in the kindergarten were playing at rolling ball and the older scholars sang their songs when the visitors passed through the schools.



OFFICIALS' CLUB ROOM, WHERE LUNCHEON WAS SERVED BY HOUSEHOLD-ARTS CLASS

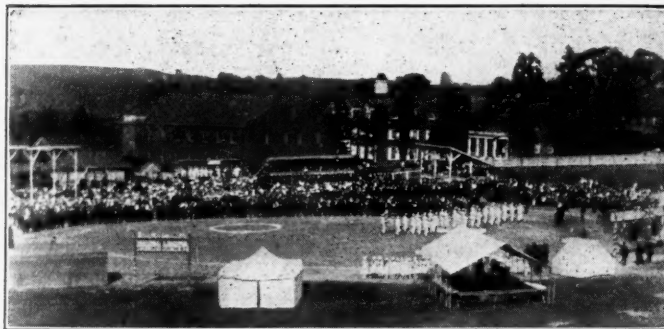


MANUAL-TRAINING ROOM. WHEN VISITED IT WAS CROWDED WITH PUPILS HARD AT WORK

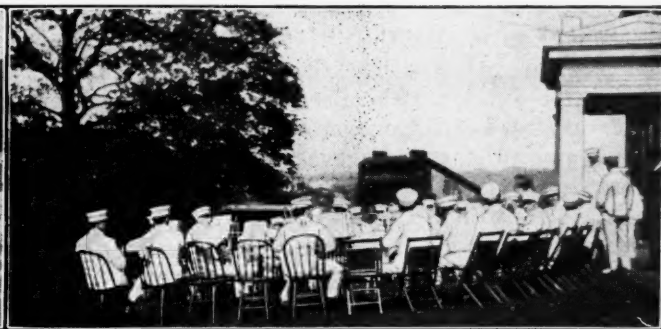
This was followed by the fire drill down the excellently ample fire stairway in the rear of the building. As the hill slopes up behind the school, the distance from the upper rooms to the ground is much reduced. School in Ellsworth seems to have lost all its terrors for the small folk.

After the inspection of the school proper the visitors went to the dancing platform, where the Slovaks, Russians

After the dances a visit was paid to the manual-training department, where several young men were hard at work making furniture. On exhibition were swings, towel rollers, tables, benches, stools, tabourets with woven tops, tooth-brush racks, bench hooks for sawing and shoulders for ironing sleeves—all made and well made by the pupils. The work would stand the most minute inspection. On the walls were industrial exhibits of various kinds, but



A PANORAMIC VIEW OF THE FIELD WITH THE OFFICE BUILDING IN REAR



AMERICUS PARDINI'S ADULT BAND PLAYING DURING THE LUNCH HOUR

and Italians danced their folk dances in native costume. These gay garments with their amazing embroidery were brought over by the dancers from the countries of their origin, and they were much admired by the ladies. So anxious was everyone to view the costumes that the carefully arranged program almost suffered from the delay.

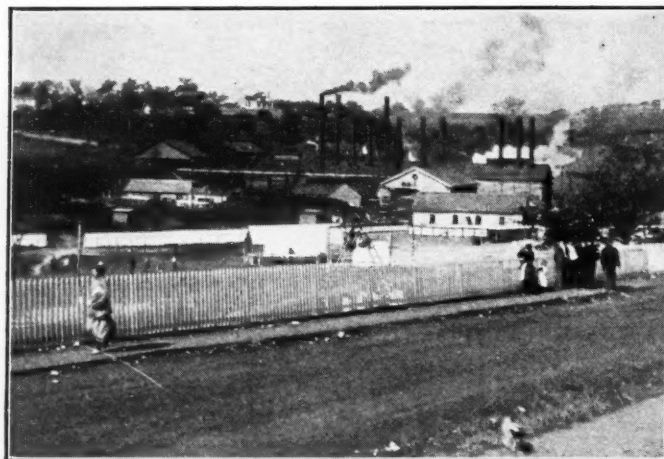
mostly electrical, such as fuses, carbons and storage-battery parts. The guests also viewed the wonderful needlework and embroidery, much of it done by the foreign women.

Then followed the dinner prepared and served by the domestic science class of the Ellsworth-Cokeburg schools,

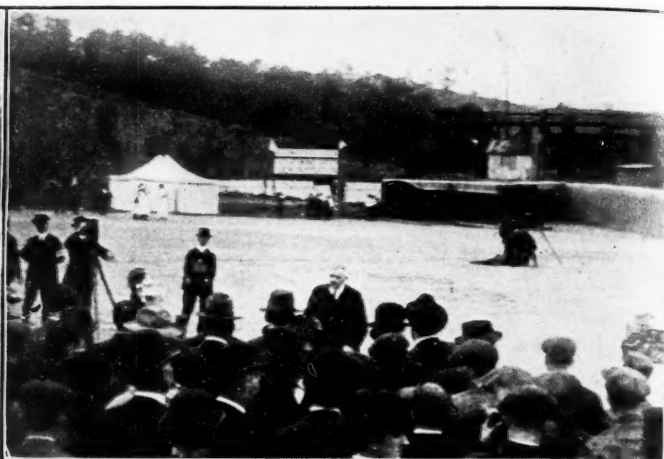


THREE VIEWS OF THE FOLK DANCERS IN THEIR PICTURESQUE NATIVE COSTUMES





VIEW OF THE MINING PLANT AND PLAYGROUND FROM THE SCHOOLHOUSE



H. V. TEMPLE AWARDING THE PRIZE CUP. IMITATION MINE ON RIGHT

the materials used being products of the Ellsworth farms. The menu was as follows: Consommé and croutons, fried spring chicken, buttered beans, escalloped potatoes, veal croquettes, Parker House rolls, nut bread, stuffed-tomato salad, marguerites, ice cream, cakes, mints, salted nuts and coffee.

#### ADMIRABLE MUSIC FROM TWO LARGE LOCAL BANDS

And then there were the bands. It is customary to applaud them and say they are the best in the state. There are so many of these best bands that it is easy to lose count of them. But the Ellsworth bands are certainly wonders and reflect remarkable credit on Americus Pardini, the director. There are two bands, one of boys and one of men, both large organizations nattily uniformed in white and both most capable aggregations. A barytone solo was rendered by Vincent Sikora. Miss Olive Painter sang a solo and with J. H. Hamilton a duet. M. F. Angotti played a cornet solo. As a background for this duet and these solos, several classical pieces were played by the bands.

The mine-safety demonstration was preceded by the grand march of the children from the Ellsworth and Cokeburg schools, each holding a tiny flag. Perhaps nothing else was more appreciated by the spectators than this little flock of humanity in gala attire and so full of

life and excitement that decorous marching was out of the question. The expression "dance past" the grandstand would better fill the bill than the more usual "march past" by which it is usually described or "straggle past" as it is too often in reality. There was a special grandstand provided for these children.

After the children were duly settled and presented with edibles to stay them during the contest, the first-aid men lined up in three rows, each containing 15 teams of 6 men, or 270 men in all. The front rank was taken by the teams of mine No. 1. Back of it were ranged those of mine No. 2, and farther back the teams of mine No. 3. Each group of teams performed a separate problem, and when the judging had been done the patients were removed on stretchers so that room was left for the teams behind to come forward and perform their event.

#### ONE HUNDRED TRAINED MEN AT EACH MINE

The Ellsworth Collieries Co. does not employ a vast number of men. At its three mines it has 347, 398 and 359 men respectively. Now 90 trained men from a mine means a wonderful percentage and shows how first-aid work has been spread. But in addition there is a mine-rescue team at each mine and an ambulance squad, so instead of 90 trained men at every operation there are an even 100. The percentages of men prepared to aid



THE CHILDREN DIVIDED THEIR ATTENTION IMPARTIALLY BETWEEN THE EDIBLES AND THE EXHIBITION



WAS THERE EVER ANYWHERE A FINER GROUP OF CAMP-FIRE GIRLS?



in times of accident are 29, 25 and 28 per cent. respectively.

The sociological director is endeavoring to get everyone interested. Even the long-bearded Russians have at last been induced to take part. They are perhaps still a little crude and disposed to perform their work with more slapdash than such delicate operations require. But time and experience will cure this as all other things, and in the long run the Russians will learn that the manner of operation is as important as the work to be done and that giving first aid is not like setting a prop or loading a car of coal.

The scores of all the teams, both in first aid and mine rescue, from any one mine were added, and the mine with the highest score received the company's cup. The judges of the events were all doctors, Dr. D. E. Sable, fire and police surgeon of Pittsburgh, representing the American Red Cross, being in charge. Drs. G. K. Hays, J. W. Allen, L. W. Hoon, G. T. Linn, R. V. Stewart, P. M. Wall and J. G. Warner, from Monongahela; Drs. W. H. Lewis, M. H. Day, from Donora; Drs. J. W. Hunter, V. P. Vieslet, C. B. Hiller, from Charleroi; Dr. L. M. Mitchell, from Belle Vernon; Dr. John Farquahar, from



A ROW OF FOLK DANCERS

California, and Dr. T. B. Herron, from Monessen, formed the judging staff.

After the first-aid events a mine-rescue demonstration was held. For this a large gallery had been erected. An explosion was realistically simulated, after which an injured miner was to be rescued. C. G. Brehm, of the Oliver & Snyder Steel Co., and Harry and George Millward, of the Tower Hill-Connellsville-Coke Co., were the judges.

The cup was then presented by Congressman H. W. Temple. Red Cross medals will also be awarded to the first-aid team making the highest percentage and Red Cross certificates to the teams making the second and third highest percentage. This will doubtless take a further test, for five teams secured 100 per cent.

After these events lunch was provided for the participants in the demonstration, and a moving picture was run off for the visitors, but unfortunately most of these had to leave early because the hour for the last train had arrived.

The work of the 13 Boy Scouts and 17 Camp Fire girls should not be overlooked. They certainly made the event pass off without a hitch. The girls especially, who gave their attention to the children taking part in the pageant and viewing the contest, proved their value in such events.

Much credit should be given E. A. S. Clarke, the president of the company, and W. A. Luce, the assistant general manager, for the excellent social work being done at Ellsworth under the immediate control of E. E. Bach, the superintendent of sociological work and of the schools.

## First-Aid Car Equipment

The emergency or fire-fighting car of the Philadelphia & Reading Coal and Iron Co. contains the following equipment:

- 9 Draeger oxygen helmets (company has 43 in all).
- 1 Fleuss oxygen helmet.
- 2 chemical fire extinguishers and charging cans.
- 3 pulmotors (company has 5 in all).
- 1 inhalator.
- 1 Johnson & Johnson No. 1 cabinet.
- 6 electric S. B. searchlights, portable.
- 10 type-B Hubbell hand lamps.
- 9 type-H Hubbell hand lamps.
- 4 type-M Hubbell hand lamps.
- 1 oxygen pump.
- 13 oxygen tanks.
- Cots, mattresses, bedding, for camping on the job.
- 1 Aldrich triplex pump for fire use.
- 1 8-hp. gas engine.
- 2,000 ft. 4-in. wrought-iron pipe.
- 8,125 ft. 2½-in. rubber hose and nozzles.
- 20 spray pipes.
- Wrenches, hatchets, axes, saws, shovels, hammers, bars, nails and all small tools.
- Stretchers, oiled suits, lanterns, Davy safety lamps, rope, block-and-tackle rigs, 2 wood and 1 iron telephone sets.
- 9,540 ft. telephone cable, insulated.
- 1 cook stove.
- 1 generator set, switches and all accessories.
- 2 rolls of fireproof brattice and 10 rolls of nonfireproof brattice, 240 yd. in all.

The same company has 1,740 men who have been trained in the wearing of helmets.

## Sociological Notes

**The Holy Name Society in Pittston, Penn.,** in connection with St. John's Roman Catholic Church, has started a class to prepare mine workers for the mine foremen's examinations. The class will meet at the new clubhouse of the society and be instructed by George V. O'Hara, mine foreman of the Pennsylvania Coal Co.

**The Miners' Federation at Nottingham, England,** on Oct. 7 passed a resolution in favor of the abolition of electrically driven coal-cutting machinery. They also demanded an 8-hr. day for outside men and a minimum wage of 5 shillings, or \$1.21, per day for adult workers. A resolution advocating the starting of work at 8 a.m. instead of 6 a.m. was rejected. The British Government was asked to amend the Old-Age Pension Act so as to reduce the age at which pensions were granted to 65 years and to make the pension not less than \$1.82 per week.

**At Trotter, Continental No. 1, United and Footedale,** plants of the H. C. Frick Coke Co., first-aid meets were held on Oct. 7. At Trotter, Davidson, Youngstown and Leisenring No. 2, all scored 97½; Coalbrook and Juniata, 96; Leisenring No. 3, 95½; Trotter, 95½; Rist 92; Adelaide, 92; Leisenring No. 1, 92, and Buckeye, 89½. At Continental, Continental No. 1 scored 98; Lemont No. 1 and Continental No. 2 each 96; Kyle, 92; Lemont No. 2 and Oliphant, each 90; Collier, 88; Continental No. 3, 87; York Run, 81; Wynn, 80; Redstone, 79, and Shoaf, 75. At United, Southwest No. 1 scored 100; Standard, 99½; United and Calumet, each 98½; Brinkerton, 97½; Hecla No. 2, 97; Mammoth, 96½; Whitney and Hecla No. 1, each 95½; Hostetter and Bagdaley, each 95; Dorothy, 94½; Central, 93½; Hecla No. 3, 41½; Marguerite, 90½. At Footedale, Colonial No. 4 scored 98; Edenborn, 96½; Buffington, 95½; Colonial No. 1, 94½; Gates, 94; Ronco, 93; Leckrone and Lambert, each 91½; Footedale, 90; Filbert, 88½; Colonial No. 7, 87; Bridgeport, 86½, and Dearth, 73½. The three events submitted at each of the four plants were identical, so that the ratings are strictly comparable, and Southwest No. 1, the only team with a perfect score, may be acclaimed the winner.

## Discussion by Readers

### Store Checks vs. Thrift

*Letter No. 1*—I was glad to see the Foreword in *Coal Age*, Oct. 16, p. 619, drawing attention to the evils of the store-check system. I have no objection to a properly conducted company store, which is an absolute necessity in many communities removed from a town.

In the conduct of such a store, however, it should be recognized as a good business principle that every outlay of capital is entitled to a fair return on its investment. Too often has the company store played a dual part and been required not only to make a profit on its capitalization, but to carry the burden of other departments of a coal-mining company by making good the losses sustained in those departments. When the company store is thus used as a support for the operating end or for the sales department of the mine, its profits can hardly be said to be legitimate. Every branch of the company's business should be made to carry its own burdens.

When the profits of a store are made to cover operating expenses, it means that the miner who produces the coal is taxed to help the consumer pay for its use. The miner does this by the high prices he is obliged to pay for his goods at the store. While such practice may not be dishonest, it is certainly questionable.

#### THE LOAN-SHARK EVIL

Another objection to the store-check system is the opportunity that it affords the speculator, who takes advantage of the necessity of the one holding the checks and redeems them for cash at a large discount. This practice is similar to what is known as the "loan-shark evil," since it robs the laborer of a good percentage of his hard-earned wages. Checks so redeemed are presented on payday, and the speculator receives the full amount of cash that they represent, in return for the money he kindly (?) advanced. I have known of clerks in the offices of coal companies who made more each month by such practices than the amount of their salary. Where the bookkeeper is also the paymaster, as often happens, the transaction is a simple and easy one. Too often these checks are redeemed at the saloon, whereby the bartender makes a double profit by the discount on the checks and the sale of his liquor.

#### ANOTHER ASPECT OF THE CASE

Both the store-check system and an unlimited credit on the store books are a source of evil and not only throw a burden on the man himself, who takes advantage of the system to run in debt to the store, but on his coworkers in the mine, who suffer as a result, and the company is likewise a loser in the end.

The system operates as follows: The man who runs up a high bill at the store or overdraws his account often succeeds in getting the best places in the mine where he can make the most money. He is generally wise to this fact. The foreman is notified of the man's indebted-

ness, and to assist in squaring the debt, that man is shifted to a place where he can make more money, while the thrifty man who pays his bills regularly each month must take anything he can get, his name remaining on the waiting list.

In such mines one often finds a half-dozen incompetent men doing the work that could be accomplished by four or five men who are experienced in the work. In like manner the man in debt at the store is likely to be the one called on for extra work, nights and Sundays, or he is kept on the payroll during periods when the mine is idle and often to the exclusion of better men.

It may not be the intention of the company to show favoritism, but where credit is extended at the store to employees, it is only natural that the company should wish to square the accounts by every means in its power. Such practices, in effect, place a premium on incompetence and improvidence, since the men are not slow to avail themselves of the advantage thus afforded them. This condition is generally avoided where an agreement exists between the miners and operators, because the contract is so worded as to provide equal treatment for all employees.

#### COMPARISON OF WORKERS

A simple comparison of the thrifty man with the hand-to-mouth or improvident man shows that, while the former is a creditor, the latter is always a debtor. The one has learned that his welfare depends on efficient and conscientious work—he believes in giving an honest day's work for an honest day's pay. On the other hand the improvident man believes that more is to be gained by keeping in his employer's debt. He systematically neglects his work, which is below par. He counts on his indebtedness to the company as his best protection. It is clear that a few such men greatly reduce the efficiency of the mine and destroy the morale of the working force. As thrift spells efficiency in a workman, improvidence is invariably synonymous with incompetence of the worker.

#### WHAT IS THE REMEDY?

There are probably other evils that will be suggested in the further discussion of this subject. I have mentioned the above as they occurred to me, without much thought of sequence. The chief question, however, is, What is the remedy for these conditions? The first step, no doubt, is the recognition of the evil by operators and employees alike.

There are men who believe the system to be good. They consider that the miner's indebtedness acts as a restraint on the upward tendencies of the cost of living and the downward tendencies of wages. The debtor system, often regarded as a club, is generally wielded with greater effect in favor of the mine worker than of the operator. It is far more to the interest of the latter to promote thrift among employees than to encourage them to run in debt. The aim should be to encourage thrift as a



means to more comfortable living rather than attempting to force men by this means to accept hard conditions in the mine.

In my opinion the company store should be run independent of all other operations of the company. The business should be conducted on the same plan as that of an independent merchant. Goods should be sold for which there is the greatest demand. The price should be such as to yield a fair profit only, and miners should not be discriminated against because they may choose to trade elsewhere. Trade should be won by fair dealing.

On the same ground that miners refuse to extend credit to the company by continuing to work if not paid on the regular payday, the store could refuse to extend credit for goods when payment for the same is not promptly made. If the miner finds himself unable to secure unlimited credit, he will soon discover suitable means to provide against any ordinary emergency. Necessity is responsible for many of our virtues, one of which is thrift.

GEORGE N. LANTZ.

New Straitsville, Ohio.

*Letter No. 2*—It is all very well to let one's sympathy run riot as regards store checks or "scrip," especially if that particular one is totally unfamiliar with the practical operation of a coal camp, but the vicious maligning of the "scrip system" is only in keeping with the multitude of erroneous ideas that people, who work above ground, harbor with reference to coal mining in general. Moreover, it is not fair to condemn the evils of a mining camp without pointing out its virtues.

In the first place the practice of "peonage," the abuse of workmen, exorbitant profits, etc., have long been things of the past, and in their place today we have the average coal camp conducted along practical business lines. With the present existing labor conditions, the average coal miner is a free agent in every respect. It is not ill treatment at the hands of coal-mining officials that is spoiling the coal miner of today, but the unmerited sympathy of a vast army of people who have no actual knowledge of the conditions, but are swayed by magazine writers and newspaper reporters. The latter class are either criminally guilty of misrepresentation or irresponsible.

#### ACTUAL CONDITIONS MISREPRESENTED

The average magazine or newspaper article is usually a joke (if it were not so serious) in the eyes of practical coal-mining men. Nevertheless, it is the popular idea that we are a class of pirates. Popular opinion seemingly does not consider that the days of slavery are gone and that we are subject to scrupulously close investigation by the mining department of the state, the same as are purveyors of groceries and drugs sold under the pure-food law. With work as plentiful as it usually is in this country, an abused workman in any class of labor is not slow to quit his job, particularly a coal miner. But you never hear of a coal miner ever following another profession. Why? Because when he does work, and he usually works only when he pleases (imagine him pulling off that stunt in the average factory!), he earns a larger wage than is paid per day for any other class of labor.

Now the crux of the situation is the fact that these same high wages permit him to work as he pleases and to squander his money during the periods of idleness. The high wages paid to miners are directly responsible for the

general clamor for a lower priced fuel. In other words, this shiftless labor is a creature that we coal men have on our hands and for which we are not responsible. Now, are we going to let them starve because they are shiftless? Can we, in this Twentieth Century, reform the world when it has not been done in the ages passed and gone? Were we to refuse to advance some miners money to secure picks, shovels, powder, etc., they could not work. That is one thing that makes scrip a necessity.

Second, their wives and children are waiting to eat until payday arrives. Shall we turn them down and say, We are going to teach you thrift. Quit your kidding! Did you ever cut "scrip"? No. Well I have—thousands and thousands of dollars' worth; and I know that the good it did the women and children *must* be taken into consideration. It is true miners are reckless with scrip. So are they with money. It is the same old story—come easy, go easy. What are we going to do about it? Are we our brother's keeper? We know women and children must eat. Ideas are all right—but to eat is vitally practical. I have scratched my head many a time wondering who was going to foot the bill if I let them eat.

#### PROFITS OF COMPANY STORES

Now about this store-profit business. In the average coal camp, profits are figured as a certain percentage of the investment, and that is not nearly in keeping with the percentage figured by the ordinary grocer in a city of any size. I have lived in both places and know this to be the fact.

If I abused my workmen any more than any coal operator who may read this article does his, my men would leave me. If I overcharged them for their goods, they would buy elsewhere. If they bought elsewhere or if they left us, our mines would cease to run. Anybody, however badly informed he may be, knows that the coal production of this country is enormous. Politicians are too thick, and we all know that they would make capital of any digression in the coal business, the same as in any other industry.

Again, the Federal authorities operate a certain department, which makes special reports to the Government in respect to mines, just as they report conditions in regard to hotels and other public utilities. These reports, I have been informed by the officials, are not made public, but the Government has ample access to them.

As regards thrift among our miners—sure, we encourage it all we possibly can; for we realize the value of a steady independent workman, and incidentally, we never have any trouble whatsoever with this class of workmen. They never complain or strike, but they own automobiles and soak money away in the large banks in the various cities that operate foreign departments.

It seems the public in general does not want to know the truth about mining conditions, but would rather read a virulent article written by someone who went through the mining district on a Pullman. G. E. WEBER.

Cincinnati, Ohio.

#### A Flooded Mine Proposition

*Letter No. 1*—Referring to the inquiry of Wm. W. Miller, *Coal Age*, Oct. 16, page 646, I will say that the building of a dam, as he stated, across both entries is in my judgment the best thing that could have been done



under the circumstances. That work, followed by getting the pumps in place as quickly as possible, was no doubt the means of saving the mine.

I could not approve the idea of building a permanent stopping across the face of room 4 or any of the adjoining rooms. Assuming this could be done and the dam made sufficiently strong to withstand the pressure of the water, it would still be unsafe to work the rooms in that section of the mine, because it would not be known at what moment the water would be tapped again. Of course this means that further work in that block of coal must be stopped or the chance taken of being compelled to build a stopping in every room. Neither could I approve the plan of drilling holes from the surface through which cement grouting could be run into the rooms.

My plan would be to pump all of the water out of the old mine and then have those workings carefully examined by competent miners, in company with the mine manager and mine foreman. My motto is always "Safety First," which means to cut out every possible danger. It is well known that miners are always loath to work in a mine where there is danger of water breaking into the workings. However, seeing this was a drift mine in a flat formation, there is little to be feared in respect to a great water pressure. Had this been a slope or a shaft mine, it would have been a different proposition, and another plan would then have had to be adopted.

Republic, Ala.

FIREBOSS.

### Labor in Bituminous Mines

Referring to Geo. S. Brackett's comments in reply to my letter, both of which were published in *The Colliery Engineer*, October, 1915, p. 161, permit me to add a few words in justification of my previous statement criticizing his article on this subject, which also appeared in *The Colliery Engineer* for September, p. 99. In doing this, I do not wish to prolong the argument, but desire to say that I do not think I misunderstood the expression used by Mr. Brackett in his article.

#### INFLUENCE OF MANAGEMENT TO REDUCE COSTS

Mr. Brackett states plainly, at the beginning of the article, "The management at a mine has comparatively little influence over the mine-supply costs." In reply to this, I want to reiterate my previous statement, "The management at a mine has a very large influence over the mine-supply costs, which can vary 100 per cent. or more according to the care and vigilance exercised in watching that part of the costs." In my opinion the influence of the management is proportionately as great over the total expenditure as over the cost for labor. It is true that, as Mr. Brackett states, the costs for labor are far in excess of the supply costs, but I claim that the local management should exert the same influence over the one as over the other. I admit, of course, that if the percentage of saving is the same in both, the economy effected will be greater in the one case than in the other.

#### VIGILANCE REQUIRED TO PREVENT WASTE

In his letter, Mr. Brackett says, "Ties or props wasted in old rooms are there to be seen many times before they are finally covered up." While this is true, unless the matter is given special attention, such unused ties and props are not seen and soon become lost to view,

being covered with a fall of roof or other waste material. The point I wish to emphasize is that, since these matters can be given attention, the local management is responsible for the influence it is possible to exert on the supply costs.

I might give further examples of the waste of material in mines and the possibilities of eliminating this waste and reducing the cost of production, but every experienced mine manager is already familiar with these points, and I will not enlarge on the items mentioned in my previous letter, which are sufficient to illustrate my contention that strict vigilance is necessary to prevent large leaks in supply costs. In this connection and to further emphasize this claim, I would refer here to Lehman G. Hauger's article on "Practical Economy at Coal Mines," *The Colliery Engineer*, October, 1915, p. 128, and H. H. Warner's article entitled "Handling Mine Supplies," *Coal Age*, Oct. 23, p. 665. EDWARD H. COXE.

Knoxville, Tenn.

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### Responsibility of Miners

*Letter No. 2*—In the letters written for *Coal Age* I have observed many references to the plainly visible changes that are taking place in the attitude of miners toward coal operators. In what I have to say I am not going to enter a protest against labor unions or the organization of miners for their own protection. I do not wish to criticize any effort made to better conditions in mining, either in respect to employer or employed. I believe that labor unions can be made of great benefit, not only to the working classes, but to operators as well, provided they are properly conducted and not permitted to be controlled by a few paid organizers whose constant aim is to stir up trouble among the men.

#### LABOR UNION METHODS ANALYZED

Too often union officials claim that all members of the union are entitled to weekly benefits when they unite to fight their supposed grievances. They are willing to pay these weekly benefits during a strike; but I would ask, When has a local union ever paid the rent bill or the store bill of one of its members who was in need, during a time when the mine has been closed for lack of orders?

There is a responsibility resting on the miner for his action in supporting, without sufficient cause, any proposition that will throw the mine idle for an extended period. Miners suffer more as a result of these enforced periods of idleness than the coal operators themselves. Compare the attitude of the local unions in this respect with that of many large coal companies. While it is claimed that union miners get more money for their labor and work less time than nonunion miners, it is a fact that many of the larger coal companies are paying their men more than is paid for the same labor in organized mines.

#### THE H. C. FRICK MINES NOT ORGANIZED

This is true of the H. C. Frick Coke Co. whose mines are unorganized. The men working in these mines never know of an increase in wages till the same is announced and never make a demand for such increase. When business conditions permit, a notice is posted by

the company, stating that an advance of 10 per cent. will be made in the pay of all mine workers. This treatment does not correspond with the claim often made by union miners that coal operators maintain a brutal attitude toward their employees. It is to be hoped that mine workers will realize more and more their responsibility in respect to the proper control of their unions.

#### RESPONSIBILITY OF MINERS WITH RESPECT TO SAFETY

There is another responsibility resting on the miner respecting his attitude toward his own safety and that of his fellow-workers. I have been much interested in reading the letters on "Prevention of Mine Explosions." While many good suggestions have been made, however, it is a fact that such disasters still continue to occur. According to the report made on the Orenda mine explosion of Aug. 31, 1915, the gas was ignited by a spark, in the operation of an electric haulage motor. It would seem that if proper precautions had been adopted in this mine, the ignition of the gas and the resulting explosion would not have occurred.

In other cases a reckless miner enters an abandoned portion of the mine carrying an open light when he knows the place to be dangerous. Another miner handles his lamp carelessly or tampers with it, and in so doing runs the risk of causing an explosion. In most cases

the mine foreman employs a number of firebosses and assistant foremen on whom he must depend for the thorough inspection of the mine before permitting the men to enter for work. If one of these men makes a false report or fails to make a thorough inspection of his district, an accident is liable to happen.

#### RESPONSIBILITY OF THE MANAGEMENT

Besides the responsibility resting on each miner working in the mine, much depends on the safe management of the mine, especially where explosive gases are being generated in pillar workings where it is often difficult to secure thorough ventilation and avoid the accumulation of explosive gases on the falls. It may even be necessary to sink a drillhole from the surface in order to drain the gas from such places. To avoid accidents, it is important to take every precaution with respect to maintaining safe conditions on the haulage roads, the timbering of working places and the blasting of the coal. Shot-firers must be employed in many cases whose duty it is to inspect every shot before firing the same and to refuse to fire any hole that in their judgment is unsafe.

When these responsibilities are fully realized by miners and operators, the number of mine accidents will be greatly reduced.

JOHN MAJER.

Listie, Penn.

# Study Course in Coal Mining

BY J. T. BEARD

## The Coal Age Pocket Book

### METRIC SYSTEM OF WEIGHTS AND MEASURES

The units of the metric system are the **gram, meter and liter**. The system, unlike that of the United States and Great Britain is wholly a **decimal system** and, for that reason, is more convenient for use.

**Denominations**—The higher denominations of weight, length and capacity are obtained by multiplying each respective unit by 10, 100, 1000, etc., while lower denominations than the unit are likewise obtained by dividing the same by 10, 100 or 1000.

The denominations of the metric system are expressed by the Latin and Greek prefixes, the former being used to indicate divisions of the unit, while the latter are employed to express multiples of the same unit. These prefixes and their respective values are as follows:

Milli,	1/1000.....	1 milligram (mg.)	= 0.001	gram
Centi,	1/100.....	1 centigram (cg.)	= 0.01	gram
Deci,	1/10.....	1 decigram (dg.)	= 0.1	gram
<b>Unit of Weight..... 1 gram</b>				
Deca,	10.....	1 decagram	= 10	grams
Hecto,	100.....	1 hectogram	= 100	grams
Kilo,	1000.....	1 kilogram (kg)	= 1000	grams
Myria,	10,000.....	1 myriagram	= 10,000	grams

The same prefixes are used to express similar divisions and multiples of the units of length and capacity. Area and volume are expressed by the words square and cubic preceding the same denominations of length. Following are the tables of the metric system and equivalents:

#### METRIC WEIGHT

10 milligrams	= 1 centigram.....	0.15432356	gr. (troy)
10 centigrams	= 1 decigram.....	1.54323564	gr.
10 decigrams	= 1 gram.....	15.43235639	gr.
		0.03527396	oz. (avdp.)
10 grams	= 1 decagram.....	0.35273957	oz.
10 decagrams	= 1 hectogram.....	3.52739575	oz.
10 hectograms	= 1 kilogram.....	35.27395746	oz.
		2.20462234	lb.
10 kilograms	= 1 myriagram.....	22.04622341	lb.
		0.22046223	cwt.
10 myriagrams	= 1 quintal.....	2.20462234	cwt.
10 quintals	= 1 tonne.....	1.10231117	tons

The French tonne (2204.6 lb.) differs but slightly from the British long ton (2240 lb.).

#### METRIC LENGTH

10 millimeters	= 1 centimeter.....	0.3937	inches
10 centimeters	= 1 decimeter.....	3.937	inches
10 decimeters	= 1 meter.....	39.37	inches
		3.2808	feet
10 meters	= 1 decameter.....	32.8083	feet
10 decameters	= 1 hectometer.....	328.0833	feet
		0.0621	miles
10 hectometers	= 1 kilometer.....	0.6214	miles

## The Coal Age Pocket Book

The Austrian, Prussian, Danish and Norwegian mile is equal to about 4.7 American miles; the Swedish, to about 6.3 American miles; while the Russian "verst" is 3500 ft.

### METRIC AREA

100 sq. millimeters	= 1 sq. centimeter.....	0.155	sq.in.
100 sq. centimeters	= 1 sq. decimeter.....	15.500	sq.in.
100 sq. decimeters	= 1 sq. meter (centare).....	1549.997	sq.in.
		10.764	sq.ft.
100 centares	= 1 sq. decameter (are).....	1076.387	sq.ft.
		0.025	acres
100 ares	= 1 sq. hectometer (hectare).....	2.471	acres
100 hectares	= 1 sq. kilometer.....	247.104	acres
		0.386	sq.mi.
100 sq. kilometers	= 1 sq. myriameter.....	38.610	sq.mi.

The unit of area is the square meter or centare.

### METRIC VOLUME

1000 cu. millimeters	= 1 cu. centimeter.....	0.061	cu.in.
1000 cu. centimeters	= 1 cu. decimeter.....	61.023	cu.in.
1000 cu. decimeters	= 1 cu. meter.....	35.314	cu.ft.
		1.308	cu.yd.

The weight of 1 cu. centimeter of distilled water at maximum density (4° C.), weighed in a vacuum, is 1 gram; or 1 cu. decimeter of same under like conditions is 1 kilogram.

### METRIC CAPACITY

10 milliliters	= 1 centiliter.....	0.610	cu.in.
10 centiliters	= 1 deciliter.....	6.102	cu.in.
10 deciliters	= 1 liter.....	61.023	cu.in.
		0.035	cu.ft.
10 liters	= 1 decaliter (centistere).....	0.353	cu.ft.
10 centisteres	= 1 hectoliter (decistere).....	3.531	cu.ft.
10 decisteres	= 1 kiloliter (stere).....	35.314	cu.ft.
10 steres	= 1 myrialiter (decastere).....	353.145	cu.ft.

The liter is the unit of capacity in the metric system. Its volume is 1000 cu. centimeters or 1 cu. decimeter. It contains 61.02338189 cu.in., or 0.26417 gal. (winchester). Or a single winchester gallon contains 3.785434 liters.

**The Fluid Ounce**—What is known as the "fluid ounce" is a quantity of any liquid equal to that of pure water at maximum density (4° C.) and weighing exactly 1 oz. avoirdupois. The volume of the fluid ounce is calculated as follows:

1 cubic centimeter of water (4° C.) = 1 gram.

1 ounce avoirdupois = 437.5 grains.

1 gram = 15.43236 grains.

Hence, since the volume of 1 gram (water) is 1 c.c. and the fluid ounce has a volume based similarly on the avoirdupois ounce, the value of the fluid ounce is

$$\text{Fluid ounce (fl.oz.)} = \frac{437.5}{15.43236} = 28.3495 \text{ c.c.}$$

The **minim** (a drop), the smallest liquid measure, is  $\frac{1}{60}$  of a fluid dram or the equivalent in volume of 1 grain, which is  $1 \div 15.43236 = 0.0648 \text{ c.c.}$ ; or  $28.3495 \div 437.5 = 0.0648 \text{ c.c.}$



## Inquiries of General Interest

### Engine-Plane Haulage

Will you kindly explain the method of solving a problem pertaining to rope haulage on an incline? The question is as follows:

On a slope pitching 25 deg. and 2,000 ft. long, a trip of eight loaded cars is to be hoisted in 5 min. The weight of the empty cars is 1,500 lb. each and the average capacity 3,500 lb. of coal. What is the actual horsepower of the engine required to haul this loaded trip up the incline, and what size of plow-steel rope will be required in this case, using 5 as a factor of safety? D. J. BOWEN.

Lafayette, Colo.

Assuming an engine-plane haulage in which the loaded cars are hauled up the slope, without being counterbalanced by the weight of the descending empty cars, the total load on the winding drum is the combined gravity pull of the loaded cars and the rope, plus the friction pull of the entire moving load, including the rope.

Under fair average conditions in mining practice it is safe to estimate on a track resistance of 40 lb. per ton on a level road. The corresponding track resistance when hauling on an inclination of 25 deg. is  $40 \times \cos 25^\circ = 40 \times 0.9 = 36$  lb. per ton. To this must be added the gravity pull per ton due to the inclination. There being 2,000 lb. in a ton, the gravity pull in this case is  $2,000 \times \sin 25^\circ = 2,000 \times 0.4226 =$  say 845 lb. per ton. Therefore in this case the total load on the engine is  $845 + 36 = 881$  lb. per ton of moving load, including the rope.

The weight of the loaded trip is  $8 (1,500 + 3,500) = 40,000$  lb., or 20 tons. Then allowing, say, an extra ton for the weight of the rope, for the purpose of estimating the size of rope required, gives a total approximate moving load of 21 tons. The load on the rope at the drum, due to the combined track resistance and gravity pull, is then  $881 \times 21 \div 2,000 = 9.25$  tons. Now, calling the diameter of the rope  $d$  (inches) and the load on the rope  $L$  (tons), and using a factor of safety  $f = 5$ , since the breaking load of a 1-in. six-strand seven-wire plow-steel haulage rope is 42 tons, we have

$$d = \sqrt{\frac{fL}{42}} = \sqrt{\frac{5 \times 9.25}{42}} = 1.05, \text{ say } 1\frac{1}{8} \text{ in.}$$

This rope weighs 2 lb. per ft., as taken from wire-rope tables, which makes the total weight of the rope on this incline  $2,000 \times 2 = 4,000$  lb., or 2 tons. The total moving load is therefore 22 tons, which makes the load on the rope at the drum  $22 \times 881 \div 2,000 = 9.69$  tons.

Reversing the previous formula, to find the safe load on a  $1\frac{1}{8}$ -in. plow-steel haulage rope, using a factor of safety  $f = 5$ , we have

$$L = \frac{42 d^2}{f} = \frac{42 (1\frac{1}{8})^2}{5} = 10.63 \text{ tons}$$

which shows that this rope is amply safe to haul the required load.

The horsepower of the engine required for this hoist is estimated from the load on the engine and the speed of winding. To haul the trip a distance of 2,000 ft. in 5 min. will require a speed of winding  $2,000 \div 5 = 400$  ft. per min. The required horsepower of the engine, assuming an efficiency of 85 per cent., is therefore

$$H = \frac{9.69 \times 2,000 \times 400}{0.85 \times 33,000} = 276 + hp.$$

In this calculation, no allowance is made for time lost in starting and stopping the trip. The time of acceleration and deceleration of the loaded trip will depend on the load on the engine and the speed to be attained.

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### Friction Hoist for Engine Plane

We are installing in our plant a 40-hp. friction hoist to pull a 5-ton loaded car up a 30-deg. incline at a speed of 200 ft. per min. The hoist consists of a 36-in. drum bolted to the spokes of an iron wheel 80 in. in diameter and having a 10-in. face. This wheel and drum are driven by a paper friction pinion 12 in. in diameter, with 10-in. face. This pinion is forced against the driving wheel of the drum with a pressure sufficient to give the desired friction and enable it to transmit the 40 hp. of the engine to the drum. We estimate that the required speed of the drum, which is 3 ft. in diameter, is  $200 \div (3 \times 3.1416) =$  say 21 r.p.m. There is, however, considerable difference of opinion as to what speed it will be necessary to run the 12-in. pinion in order to operate the drum at the required speed.

Peoria, Ill.

CHARLES F. SHERMAN.

It is not customary to employ a friction drive of this type for hoisting on an incline or for the transmission of as high a power as is required in this case.

Assuming a track resistance on the level of 40 lb. per ton gives for the same item on an incline of 30 deg.  $40 \times \cos 30 \text{ deg.} = 40 \times 0.866 = 34.6$  lb. per ton. Adding this track resistance to the gravity pull of a 5-ton load on this incline gives 1,034.6 lb. per ton as the total load on the drum. Correspondent does not mention the length of the incline, but a  $\frac{3}{4}$ -in. plow-steel rope weighing 0.89 lb. per ft. would be required for this haul, and this may be assumed to add from  $\frac{1}{4}$  to  $\frac{1}{2}$  ton, making the load hoisted, say, 5.5 tons. The total load on the drum is then  $1,034.6 \times 5.5 = 5,690$  lb.

The diameter of the large wheel being 80 in. and that of the drum 36 in., the load at the circumference of the large wheel is  $5,690 \times 36 \div 80 = 2,560$  lb. Assuming a coefficient of friction between the two wheels as 0.25, it would be necessary to exert a pressure of about 5 tons in forcing the pinion against the face of the large wheel in order to hold this load and prevent slipping of the pinion. We cannot recommend this type of hoist, but assuming there is no slip in the friction drive, the pinion should be run at a speed of  $21 \times 80 \div 12 = 140$  r.p.m.

## Examination Questions

### West Virginia Examination for Mine Foremen, Oct. 26-28

#### (Selected Questions)

*Ques.*—What particular dangers are there in pillar drawing and what, in your opinion, should be done to prevent accidents in the performance of this work?

*Ans.*—When drawing pillars, the miner is working what is called a "loose end." He is particularly subject to danger from falling slate, owing to the weak support of the roof afforded by the ends of the pillars. There is also in many cases the added danger of the accumulation of gas on the falls, which may at any moment be driven down on the lamps of the miners by a slight fall of slate above.

In order to avoid accidents from the first cause, the miner should not neglect the setting of sufficient timbers behind and around him to give an added support to the roof and prevent the crushing of the end of the pillar. As far as possible, the miner should work on the rib of the pillar or in a protected position. He should watch constantly the timbers and note the action of the roof, giving particular attention to any slips that may appear in the roof slate. It is important that the miner should keep the way clear of all obstructions so that he can retreat quickly to a place of safety on the first indication of danger.

When drawing pillars in a place where gas may be generated, special care should be taken to avoid heavy local falls of roof that would furnish holes for the accumulation of gas. By maintaining a regular line of pillar work, much can be done to induce a gradual and uniform settlement of the roof along this line as the pillars are drawn back. By this means and by maintaining a sufficient current of air so conducted as to sweep the falls, any dangerous accumulation of gas can be generally avoided. Under such conditions, only safety lamps should be used by the miners when drawing pillars, and these must be carefully watched to observe any increase in the quantity of gas present. The lamps should be put in a safe position where they will be protected from injury owing to falls of roof, which are more liable to occur in pillar work than when driving rooms or headings.

*Ques.*—What should be considered in determining the size of pillars in mines?

*Ans.*—The depth, thickness and inclination of the seam; the character of the roof, coal and floor; the system of mining or plan of driving rooms and entries; length and width of the rooms and other openings; method adopted for mining the coal; and, finally, the possibility of extended periods of idleness in the working of the mine. These should all be considered as factors in determining the size of pillars required for the safe and economical working of the coal and to secure the largest recovery of the same.

*Ques.*—What conditions would guide you in determining the width of headings and rooms?

*Ans.*—The depth, thickness and inclination of the seam; the direction of driving the rooms with respect to the cleats or cleavages of the coal; the nature of the roof and floor of the seam; the method of mining adopted or the general plan of the workings; the method of mining and loading the coal at the face; and, what is very important in economical mining, the amount of waste to be handled and the length of time the rooms may have to stand idle.

*Ques.*—In your opinion, would a good system of timbering prevent accidents?

*Ans.*—A good system of timbering that is well adapted to the particular conditions existing at the working face will go far to prevent the frequent occurrence of accidents due to falls of roof and coal. In general, especially when working under a frail roof or where frequent slips occur in the roof, a systematic plan of timbering is important, and this should be maintained uniformly as the faces advance. The practice of setting timbers when and where the judgment of the average miner may dictate is responsible for many accidents caused by falls of roof and coal at the working face. Such practice should be abandoned and a proper system of timbering adopted in all mines.

*Ques.*—In a room with a fair roof, how far apart would you place the timbers?

*Ans.*—The distance of post timber, center to center, will depend largely on the nature of the roof, amount of roof pressure and the thickness and inclination of the seam. To some extent, the distance of posts apart will depend on the kind and size of timber used. Under fair conditions of roof and floor, in a moderate thickness of seam and small inclination or pitch, post timbers should be set from 3 to 4 ft. apart. Under better conditions than those named, this distance can be increased to 6 or 8 ft. apart. It is a good plan to stagger the timbers in each alternate row, so that the posts in succeeding rows will not stand behind each other.

*Ques.*—Where the roof is bad, how should the timbers be placed?

*Ans.*—When working under a frail or tender roof, post timbers should not be set more than 3 ft. apart, center to center. Good cap-pieces should be used above each post, and these should not be less than 1½ or 2 in. thick, 6 in. wide and 18 in. long. It may be necessary to use crossbars instead of cap-pieces to give a better support to the roof between the timbers. These crossbars should be parallel to the line of the working face. If the bottom is soft, foot boards should be used underneath the posts.

*Ques.*—Under what conditions do you consider coal dust dangerous in mines?

*Ans.*—The fine dust of a highly inflammable coal is dangerous under any conditions in mines. When gas is present in the mine air even in quantity too small to be detected by the safety lamp or where blasting is performed the danger owing to the presence of the dust is greatly increased unless special precautions are taken.



## Coal and Coke News

### Washington, D. C.

The Federal Reserve Board in its November Bulletin just published furnishes, in the Reports of Business Conditions from the several districts, some interesting comment on coal mining. The reserve agent at Philadelphia writes that "Coal-mining operations continue to improve," while from Cleveland it is stated that "the soft-coal business and coke industry is much more satisfactory, and it is nearly a sellers' market for the first time in several years." From Richmond it is reported that "Coal is in good position and its great tonnage is materially helping the railroads in caring for this territory."

An interesting report as to the position of the petroleum industry also comes from California, the reserve agent there writing as follows:

Petroleum is one of the leading industries in this district, with a present annual production of approximately 100,000,000 barrels. This general condition would seem to assure a most favorable situation, but as a matter of fact this industry has been greatly depressed during the past few years and shows no present prospect for betterment. The production, approximating 250,000 barrels per day, about balances with current consumption, but approximately 60,000,000 barrels are in storage and there is a considerable "shut-in" production; that is, wells whose output would be immediately available if desired.

Some financially strong and ably managed corporations are operating with moderate profit, but many are not operating. Effort is making to consolidate more than 100 of the smaller companies. If accomplished, the industry would be in the hands of several large corporations whose financial strength would give greater stability to the industry while apparently assuring adequate competition.

#### Two Visiting Commissions

Mining interests in common with others have heard with interest the current official announcement that:

Two commissions composed of government officials and business men from European countries are expected to reach the United States within the next few days with the primary purpose of arousing interest in the extension of reciprocal commercial relations. A commission of French business men, under the leadership of the secretary of the Budget Committee of the French Chamber of Deputies, is now due in New York with the idea of devoting considerable time to a study of general commercial conditions existing in the United States.

It is expected that the commission will visit the leading cities of the country, not only to study American methods of business, but also to extend the interest of Americans in French products and French markets. While the precise itinerary which the commission will follow is not known at present, the Bureau of Foreign and Domestic Commerce expects to be in possession of such information shortly after the commission's arrival and will then answer inquiries on the subject.

A similar commission, representing the Amsterdam Chamber of Commerce, was expected to sail from Amsterdam on Nov. 6, reaching the United States about the middle of the month. No definite information as to the course to be followed by this commission is at present available, but it is understood that the commission contemplates going directly to Washington to confer with representatives of the government and of the Chamber of Commerce of the United States before making further announcement as to its plans.

#### HARRISBURG, PENN.

The sum of approximately \$10,000,000 which has been collected by the coal companies in the anthracite region in preparation for payment to the state as a tax of 2½ per cent. upon all coal mined during 1913, 1914 and up to June 1, of this year, is in a badly muddled condition. This may either revert to the state through escheat proceedings, or may be kept by the coal companies, or still another bare possibility, may be refunded to the consumer who paid it.

As soon as the law went into effect the coal companies considered it necessary to prepare for paying this tax in the event their protest should not be sustained. Some of the companies added the 2½ per cent. to the bills, specifically listing it as the tax item, others less careful in the matter, or more confident of the success of their protest, merely blanketed the tax item by raising the price per ton, thus acquiring the money, but making no provision for refunding it in case it did not become necessary for them to pay it to the state as a tax.

Since then the Supreme Court of the state has declared the tax unconstitutional and now the problem of what is to be done with the money raised, comes up. The money does not belong to the coal companies, it is unconstitutional for the

state to accept it as a tax. If the individual consumer has protected himself with receipts he probably can demand a refund of the tax. The sums that cannot be traced to the consumers of coal who paid the tax, will probably be escheatable to the state, such a proceeding has now been instituted and is awaiting the decision of Attorney General Brown.

Probably a majority of consumers cannot produce receipts and where receipts were given they may not bear a definite statement of the amount of the tax. Retailers may argue that the increase in the cost of coal was justified for other reasons than the state tax. In this way endless confusion may hinder any attempt on the part of the consumer to get back his money collected under an unconstitutional law.

It has been suggested that the money be divided among the hospitals in the anthracite region voluntarily by the coal companies. That would relieve the state from making appropriations to such institutions for some years, and the money thus released could be diverted to other purposes. But such voluntary distribution cannot be made until legal proceedings have been disposed of, and then only in the event that the money is left in the hands of the operators.

#### Final Meeting of Mine Cave Commission

The final meeting of the Anthracite Mine Cave Commission which body formulated a comprehensive and complete report of the big problem of mine caves a short time ago, was held recently and a few incidental matters of finance were discussed. The commission accomplished a deficit during its activities and the Governor has approved an appropriation of about \$5,000 to cover this. A committee was organized to close the accounts.

While assembled the members of the commission discussed the general mine cave situation and its various problems. The men spoke of the experiences that have been encountered in the various districts that they represent on the commission. Several reported that the recommendations embodied in the report, relative to purchasing support, responsibility for damaged property, location of cemeteries, and the securing of public buildings against damage were being considered by the mining companies.

The commission's report has been submitted to the Governor and state legislators, but regrets that it has never been made available to mining men and others interested were expressed at the meeting. The report, with all of its tests of roof support, statistics on the amount of coal underground and the percentage that is mineable, discussion of the various methods of dealing with damaged surface property and hundreds of other phases and connected thoughts would no doubt be of interest to all persons interested in mining or in mining communities where the necessity of surface preservation in this regard has become apparent. Steps may be taken to have the report published by asking the next Legislature for an appropriation for this purpose.

#### PENNSYLVANIA

##### Anthracite

**Shamokin**—The discovery of a coal deposit on a farm just outside the limits of the city recently caused considerable excitement among land owners nearby, as the district was supposed to be outside of the coal bearing area.

**Wilkes-Barre**—Production of anthracite in October fell nearly half a million tons below the production in the corresponding month, of last year. The total output of coal for the first 10 months of the year is now approximately three million tons below that for the first 10 months of 1914. When the official figures are announced by the Anthracite Bureau of Information, it is probable that the tonnage of coal shipped to market last month will be about 6,150,000 tons. In October, 1914 the tonnage was 6,644,476 tons. The shipments for the last two months of 1914 aggregated 11,730,544 tons. As the biggest shipments for any one month so far have been 6,665,321 tons, made in October, 1912, it is obvious that only part of the shortage can be made up.

**Pittston**—Emphasizing the importance of timbering to the mining industry, the Pittston Mining Institute is devoting all of its Fall meetings to a demonstration of correct methods. Mine Inspector Samuel J. Jennings is conducting the demonstrations, calling into use a carload of mine props. Two

sessions of the institute have already been devoted to this topic and wide-spread interest is being caused.

In line with the general plan of the Pennsylvania Coal Co. to substitute electricity for steam as motive power, the old No. 3 shaft, one of the oldest operations in Pittston, has been completely electrified. The shaft has been widened and the sides concreted. For years it has been used only as a ventilating and pumping shaft, but with remining under the city in progress, a new tower and cages have been installed. The shaft is in the central city, a stone's throw from City Hall. There had been complaint on the noise of the steam plant. The electrically-driven apparatus will be noiseless.

#### Bituminous

**Confluence**—It is reported that Philadelphia capitalists have closed a deal for the purchase of a tract of coal land in Henry Clay Township. It is said that this tract will be developed, and visions of a coal town springing up are entertained by the residents of that vicinity.

**Gray's Landing**—It is said that within a short time every oven at the Gray's Landing works of the American-Connellsville Coal and Coke Co. will be in operation. Two hundred and forty ovens at this plant have been idle since the Sunshine Coal and Coke Co. went to the wall. Operations will be resumed in full within a short time if enough men can be found to operate the plant.

**Connellsville**—The production of coke in the Connellsville region recently rose to 433,519 tons, showing a gain of 4,200 tons over the preceding week. Shipments during the same time amounted to 441,911 tons, which filled 11,968 cars.

#### VIRGINIA

**Abingdon**—The increasing demand for laborers in the southwestern Virginia field is being well met, according to reports received here. Special activity in Wise and Lee counties is reported and laborers are being recruited in numbers throughout the South.

#### WEST VIRGINIA

**Charleston**—It is said that West Virginia coal operators are facing the greatest car shortage that has affected the shipping trade within four or five years. Railroad men state repairs to cars and the purchase of new rolling stock have been at a standstill for some years on account of the low tariffs enforced by the Interstate Commerce Commission, and that sufficient time has not been had since the lifting of the Federal ban to enable the companies to put on sufficient cars to take care of the present heavy demand.

It is expected that a state association of coal company accountants will be organized within a few weeks. It is hoped by the West Virginia operators that through the installation of a uniform system of computing cost of production they will be enabled to save considerable expense each year. It is the intention to install such a system of keeping cost accounts.

The controversy between the Public Service Commission and the United States Coal and Coke Co. over the desire of the latter to withdraw from participation in the benefits of the workmen's compensation fund, was recently ended when the company paid \$15,200, calculated by the commission as owed by the company as its share of the deficit. Upon the receipt of the check the commission formally accepted the withdrawal and the company's election to assume its own responsibility for claims due its employees for accidents and fatalities.

**Fairmont**—Traffic over local railroads destined to the Great Lakes will be discontinued after Nov. 15, according to a report received recently at the local railroad offices. It is the intention of the navigation companies on the lakes to hold the season open till a later date this year on account of many manufacturing concerns in the Northwest not being able to lay in a large supply of fuel. The navigation companies, however, consider that the passage of boats is too dangerous after the above named date, and will officially declare the shipping season closed on Nov. 15.

#### TENNESSEE

**Knoxville**—The next examination for mine foremen in all classes of mines, including both coal and metal mines, and for fire bosses will be held in the Atkins Hotel, Knoxville, Tenn., Nov. 23, 24 and 25, 1915. This examination will be both practical and technical.

#### KENTUCKY

**Whitesburg**—The Allegheny Coal and Coke Co., at Lookout, has fired an additional 100 coke ovens. This is the only company in the Big Sandy section which cokes its product.

**Barbourville**—Many of the mines in this section are working night shifts, in contrast with the situation here early in

the year when few of the mines were operating more than two or three days during the week. A full run throughout the winter is expected by the trade.

**Hartford**—The commissary of the Williams Coal Co., at the Williams mines near here, has been destroyed by fire, together with the stock and the residence of Guy Stateler, manager of the store. Mr. Stateler's garage and other buildings also were destroyed.

#### OHIO

**Barton**—The Barton Coal Co. is constructing a bridge over the St. Clairsville branch of the Baltimore & Ohio R.R. for the purpose of making another opening in the hill and loading from both openings over one tippie. The improvement will increase the output of the mine.

**Seneca**—The Cleveland mine of the Morris Coal Co., which has been idle since Aug. 1 has been re-opened with approximately 200 miners.

#### ILLINOIS

**Belleville**—The Royal coal mine, on the Louisville & Nashville R.R., after being closed more than two years, resumed operations recently. It will be operated only part time the rest of the year.

The Pittsburg Mining Co. has filed suit in the Circuit Court against the Fischer Coal and Ice Co., Fred and George Gramlich and Alfred Rodenmeyer to recover \$1,000 said to be due on a note.

**Mt. Vernon**—All the miners employed in Mine No. 1 of the Big Creek Coal Co. were on strike two days recently on account of the discharge of three pit bosses. After a conference with the company officials the miners returned to work, pending reference of the dispute to the president of the United Mine Workers of the district.

**Lenzburg**—Walter J. Grant, of Danville, referee in bankruptcy for the Federal Court of this district, opened bids a few days ago for the mine of the Tirre Coal and Mining Co., of this place, against which bankruptcy proceedings are pending. The only bid submitted was \$2,000 and was rejected. Referee Grant ordered a public sale of the property on the courthouse steps in Belleville, Ill., on Nov. 20. The sale will be conducted by P. B. Cheeney of East St. Louis, who was appointed trustee by the creditors. The company's assets are listed at \$12,500 and the liabilities at \$11,000. The company was thrown into bankruptcy in August on the petition of Mrs. Mollie E. Tirre and F. E. Tirre, of St. Louis and William F. Zager, of Lenzburg. Mrs. Tirre alleges that she loaned the company \$14,441 and F. E. Tirre says the company owes him \$1,680 salary.

#### MISSOURI

**Kirkville**—J. C. Ward, who has been president and general manager of the Big Creek Coal Co. since Mar. 23, has sold his interests in the company to the other shareholders and will devote himself to the development of his own coal properties. G. W. Hartsock, of Albia, Iowa, has been elected president of the Big Creek company and Treasurer J. R. Brown will take over the duties of general manager. William Richardson remains secretary. The company's development work will be continued.

#### COLORADO

**Denver**—As a means of communication between the management and the employees and the public the Colorado Fuel and Iron Co. has issued the first quarterly number of the "Industrial Bulletin." This is published under the direction of C. J. Hicks, executive assistant to Pres. J. F. Welborn. The "Bulletin" gives a full statement of the industrial plan drafted by John D. Rockefeller, Jr., during his recent visit and which had been adopted by the miners in all of the company camps in Colorado and Wyoming. It is illustrated and contains much matter of interest and value to the employees.

## FOREIGN NEWS

**Toronto, Canada**—Thomas Richardson, labor member of the British House of Commons for Whitehaven, and Robert Baird, secretary of the Coal Mine Owners' Association of Lanarkshire, Scotland, were in Toronto recently on their return journey from British Columbia, where they have been engaging coal miners to work in the British collieries. They have secured 260 men, 40 of whom take their families with them. The British Government advances their fare to England to be repaid by instalments from their wages. The pay for mining work in the Old Country at present is about \$4 per day and in some cases more.



## PERSONALS

Captain F. A. Hill, well known mining engineer of Seattle, Wash., has recently been on a professional visit in California examining the mother lode.

Frank H. Crockard, of Birmingham, Ala., vice-president of the Tennessee Coal, Iron & R.R. Co., is spending a few weeks in Atlantic City, N. J., recovering from a nervous breakdown.

Daniel R. Blower, state mine inspector for the 11th Bituminous District of Pennsylvania, has accepted the position of mine inspector for the Vesta Coal Co., with headquarters at California, Penn.

W. G. Thomas, for many years with the Madeira-Hill Coal Co., recently succeeded to the general managership of the Madeira-Hill operations in the anthracite region upon the death of Frank A. Hill.

Walter E. Auld has been appointed sales agent of W. A. Stone & Co., with office in Buffalo. He has for several years been connected with the Buffalo office of the Delaware, Lackawanna & Western Coal Co.

Andrew Calderwood, for many years general mine foreman for the Campbell Creek Coal Co. of West Virginia, has been appointed district mine inspector to succeed the late Enoch Carver in the seventh district.

R. R. Bunnell who represented the Skeele Coal Co. of New York in New England has resigned and will hereafter be identified with the Seiler-Blanchard Coal Co. of New York, with offices in the Kelsey Building, Springfield, Mass.

D. A. Thomas, the commissioner of munitions, who was sent to this country and Canada by Lloyd George to look after all contracts made for the British Government, recently underwent two operations in a private sanitarium in New York.

Ivor Livingston, of New York, has been employed as superintendent by the First Creek Coal Co., at its mines near Hazard, Ky. Mr. Livingston is one of the leading mining engineers in the South and is a graduate of the University of Tennessee.

Glenn A. Knox, of Fontier, Wyo., recently accepted the superintendency of the mines of the Standard Coal Co. at Standardville, Utah. These mines are located about six miles above Helper and have a capacity of approximately 1,000 tons per day.

Eli T. Conner, consulting engineer to the Delaware & Hudson Co. and to the Hudson Coal Co., has occupied offices in the new Union National Bank Building, Scranton, Penn. He will continue his principal office at 1315 Stephen Girard Building, Philadelphia, Penn.

C. S. Oldroyd, 922 Holston National Bank Building, Knoxville, Tenn., representing the Manierre box car loader and the Plymouth gasoline locomotive, has also taken the agency for the Halby shoveling machine, manufactured by the Lake Shore Engine Works, Marquette, Mich., representing this firm in the states of Tennessee, Kentucky, Virginia, West Virginia and Alabama.

Warren R. Roberts, president, and Edward E. Barrett, vice-president, of the Roberts & Schaefer Co., Chicago, have just returned from Canada where they signed a contract with a large coal company for the design and construction of an electrically operated anthracite coal dock bridge and storage plant. This will be one of the most modern installations of its kind in the country.

## OBITUARY

Winfield Scott Solomon, for the past 16 years connected with the Lehigh Valley Coal Co. as general boiler inspector and superintendent of boiler plants at its various collieries in Luzerne, Lackawanna and Schuylkill Counties, died recently at Wilkes-Barre.

W. H. Johnson, of Birmingham, Ala., traffic manager for the Southern District of the Republic Iron and Steel Co., which position he has held for many years, died recently at his residence, 1113 Twelfth Avenue, South, of tuberculosis. Mr. Johnson was 44 years old at the time of his death.

## PUBLICATIONS RECEIVED

**Rhode Island Coal.** By George H. Ashley, U. S. Geol. Surv. Bulletin 615; illustrated; 59 pp., 6x9 in.

**The Production of Peat in 1914.** By Chas. A. Davis. U. S. Geol. Surv.; unillustrated; 10 pp., 6x9 in.

**Production of Feldspar in 1914.** By Frank J. Katz. U. S. Geol. Surv.; unillustrated; 5 pp., 6x9 in.

**The Manufacture of Coke in 1914.** By C. E. Leshner. U. S. Geol. Surv.; unillustrated; 55 pp., 6x9 in.

**The Production of Lime in 1914.** By G. H. Loughlin. U. S. Geol. Surv.; unillustrated; 10 pp., 6x9 in.

**Gems and Precious Stones in 1914.** By Douglas B. Starrett. U. S. Geol. Surv.; unillustrated; 40 pp., 6x9 in.

**The Production of Silica (Quartz) in 1914.** By Frank J. Katz. U. S. Geol. Surv.; unillustrated; 5 pp., 6x9 in.

**The Production of Abrasive Material in 1914.** By Frank J. Katz. U. S. Geol. Surv.; unillustrated; 19 pp., 6x9 in.

**Safety in Stone Quarrying.** By Oliver Bowles. Bureau of Mines Technical Paper 111; illustrated; 48 pp., 6x9 in.

**Quicksilver in 1914; Production and Resources.** By H. D. McCaskey. U. S. Geol. Surv.; unillustrated; 18 pp., 6x9 in.

**The Production of Platinum and Allied Metals in 1914.** By Jas. M. Hill. U. S. Geol. Surv.; unillustrated; 20 pp., 6x9 in.

**The Phosphate Deposits of Florida.** By Geo. C. Matson. U. S. Geol. Surv. Bulletin No. 604; illustrated; 101 pp., 6x9 in.

**The Production of Magnesite in 1914.** By Charles G. Yale and Hoyt S. Gale. U. S. Geol. Surv.; illustrated; 17 pp., 6x9 in.

**Quicksilver Deposits of the Moztatzal Range, Arizona.** By F. L. Ransome. U. S. Geol. Surv. Bulletin 620-F; illustrated; 18 pp., 6x9 in.

**Possibilities of Oil in the Porcupine Dome, Rosebud County, Montana.** By C. S. Bowen. U. S. Geol. Surv. Bulletin 621-F; illustrated; 9 pp., 6x9 in.

**Iron Ore in Cass, Marion, Morris and Cherokee Counties, Texas.** By E. F. Burchard. U. S. Geol. Surv. Bulletin 620-G; illustrated; 40 pp., 6x9 in.

**The Production of Asphalt, Related Bitumens and Bituminous Rock in 1914.** By John P. Northrop. U. S. Geol. Surv.; unillustrated; 15 pp., 6x9 in.

**Statistics of the Clay-Working Industries in the United States in 1914.** By Jefferson Middleton. U. S. Geol. Surv.; unillustrated; 92 pp., 6x9 in.

**The Orofino Coal Field, Clearwater, Lewis and Idaho Counties, Idaho.** By Chas. T. Lupton. U. S. Geol. Surv. Bulletin 621-I; illustrated; 9 pp., 6x9 in.

**A Reconnaissance for Oil Near Quanah, Hardman County, Tex.** By Carroll H. Wegemann. U. S. Geol. Surv. Bulletin 621-J; illustrated; 6 pp., 6x9 in.

**Anticlines in the Clinton Sands Near Wooster, Wayne County, Ohio.** By C. A. Bonine. U. S. Geol. Surv. Bulletin 621-H; illustrated; 11 pp., 6x9 in.

**The Lawton Oil and Gas Field, Oklahoma.** By Carroll H. Wegemann and Ralph W. Howell. U. S. Geol. Surv. Bulletin 621-G; illustrated; 14 pp., 6x9 in.

**Monthly Statement of Coal-Mine Fatalities in the United States, August, 1915.** Compiled by Albert H. Fay. Bureau of Mines; unillustrated; 15 pp., 6x9 in.

**Gold, Silver, Copper, Lead and Zinc in California and Oregon in 1914; Mines Report.** By Charles G. Yale. U. S. Geol. Surv.; unillustrated; 16 pp., 6x9 in.

**Gold, Silver, Copper and Lead in South Dakota and Wyoming in 1914; Mines Report.** By Chas. W. Henderson. U. S. Geol. Surv.; unillustrated; 18 pp., 6x9 in.

**Iron-Bearing Deposits in Bossier, Caddo and Webster Parishes, Louisiana.** By E. F. Burchard. U. S. Geol. Surv. Bulletin 620-G; illustrated; 21 pp., 6x9 in.

**Mineral Resources of Alaska.** Report on Progress of Investigations in 1914. By Alfred H. Brooks and others. U. S. Geol. Surv. Bulletin 622; illustrated; 380 pp., 6x9 in.

**Abstract of Current Decisions on Mines and Mining, October, 1914, to April, 1915.** By J. W. Thompson. Bureau of Mines Bulletin 101, Law Serial 5; unillustrated; 138 pp., 6x9 in.

**Inflammability of Mixtures of Gasoline Vapor and Air.** By G. A. Burrell and H. T. Boyd. Bureau of Mines Technical Paper 115, Petroleum Technology 26; illustrated; 18 pp., 6x9 in.

**Application of the Theory of These Squares to the Adjustment of Triangulation.** By Arthur S. Adams, Coast & Geod. Surv. Serial No. 9, Special Publication No. 28; illustrated; 220 pp., 6x9 in.

**Geology and Oil Resources of the West Border of the San Joaquin Valley, North of Coalinga, Calif.** By Robert Anderson and Robert W. Pack. U. S. Geol. Surv. Bulletin 603; illustrated; 220 pp., 6x9 in.

**Analysis of Natural Gas and Illuminating Gas by Fractional Distillation at Low Temperatures and Pressures.** By G. A. Burrows, M. Sievert and L. W. Robertson. Bureau of Mines Technical Paper 104; illustrated; 41 pp., 6x9 in.

**Pulmonary Diseases Among Miners in the Joplin District, Mo., and Its Relation to Rock Dust in the Mines.** A preliminary report by A. J. Lanza and Edwin Higgins. Bureau of Mines Technical Paper 105; illustrated; 48 pp., 6x9 in.

## INDUSTRIAL NEWS

**Louisville, Ky.**—Western Kentucky coal operators have requested the Kentucky State Railroad Commission to intercede in their behalf with the Interstate Commerce Commission.

**Youngstown, Ohio.**—The La Belle Iron Works has just issued \$2,000,000 worth of bonds, with which to finance a battery of 94 coke ovens which it recently erected at its plant.

**Philadelphia, Penn.**—The Stonega Coal and Coke Co. has increased the facilities of its tidewater service by the purchase of the coal-carrying vessels "Raymond McNally" and "Dorothy."

**Hazard, Ky.**—The First Creek Coal Co. recently awarded the contract to the Fairmont Mining Machinery Co. for a rope and button retarding conveyor for the coal company's new development at Hazard.

**Washington, D. C.**—The Interstate Commerce Commission has refused the request of the Delaware, Lackawanna & Western R.R. to increase the rates of freight on anthracite shipments 25c. a ton from Taylor, Penn., to tidewater.

**St. Louis, Mo.**—The Livingston mine of the Rudledge & Taylor Coal Co., located in central Illinois on the Chicago and Eastern Illinois, and Big Four railroads, recently broke its previous record by loading 4,888 tons of coal in eight hours.

**Uniontown, Penn.**—A shipment of 7,000 tons of coke for the Italian State Railways was recently made. This is the first cargo of coke to be exported to Italy in many years, and freight charges will be about three times the original cost of the coke.

**Cincinnati, Ohio.**—Suit has been filed by the Western German Bank, of this city, against Edwin Marmet, of the Marmet Coal Co., on a note for \$27,500, secured by stock. There has been no default in the payment of interest on the note, but the bank desires to enforce payment.

**Charleston, W. Va.**—Each of the West Virginia representatives in Congress has been asked to introduce an investigation into what the coal operators of the state term "an illegal combination of railroads, operators and coal miners of other states to destroy the coal industry of West Virginia."

**Birmingham, Ala.**—One thousand tons of coke is being loaded as fast as cars can be furnished to the Yolande Coal and Coke Co. This will be shipped to New Orleans for export. A good price was obtained for this coke and it is believed in industrial circles that this is the forerunner of an extensive coke export business.

**Philadelphia, Penn.**—For the month of September the gross receipts of the Philadelphia & Reading Coal and Iron Co. showed a loss of \$672,092 as compared with the same month last year. The total deficit in net earnings for the three months ending with September amounts to \$228,962, with a deficit in surplus for the same period of \$252,962.

**Philadelphia, Penn.**—In its monthly statement of car movement the Pennsylvania R.R. reports that 57,027 cars of bituminous coal were moved eastward during the month of October, being an increase of 14,503 over September, or 34.4 per cent. During the same period 4,189 cars of coke were moved in the same direction, being an increase of 1,676, or 67 per cent.

**Whitesburg, Ky.**—Coal operators in the Kentucky River district comprising the Hazard, Boone's Fork and Elkhorn fields are experiencing no difficulty in getting ample cars and everything is booming in all the coal mining plants hereabouts. Some of the mines are having a little trouble in holding miners, especially foreigners, owing to the progress of the European war.

**Philadelphia, Penn.**—Notice has been received by local shippers of bituminous coal that the new tariffs increasing the differential on West Virginia coal to Western points by 15c.

will be filed with the Interstate Commerce Commission on Nov. 15 by the Baltimore & Ohio, Chesapeake & Ohio and Norfolk & Western railroads. This will make the new rates effective as of Dec. 15.

**Cleveland.**—The Youghiogheny and Ohio Coal Co. recently awarded a contract to the Fairmont Mining Machinery Co. for changing the method of weighing coal to the run-of-mine basis at the Florence mine. A center dump basket with operating mechanism, scale, and continuous apron feeder for elevating the coal from basket dump hopper to the screening equipment will be installed.

**Issaquah, Wash.**—The Issaquah & Superior Coal Co. mine at Issaquah, Wash., will be reopened and put on a producing basis at once. The mine has been leased by Pennsylvania capitalists. The mine was closed down on account of financial difficulties and the new operators take over a burden of \$8,000 in back wages to the miners. This will be repaid at the rate of a royalty of 15c. per ton.

**St. Louis, Mo.**—The Williams Patent Crusher and Pulverizer Co. is urging its customers to send in lists of needed repairs to their crushers as early as possible, as extreme difficulty is being experienced in procuring iron and steel with which to build crusher parts. It is believed by the Williams company that the difficulty in securing iron will increase rather than diminish.

**Philadelphia, Penn.**—The New York Shipbuilding Co., of Camden, has received the contract and has commenced the construction of a 12,500-ton collier for the Darrow-Mann Co., of Boston, Mass. On the completion of this vessel the company will build another of similar capacity and both boats will be placed in the coastwise coal trade under the management of the Coastwise Transportation Co.

**Edwardsville, Ill.**—A coal man should not be compelled to serve on the grand jury during his busy season, in the opinion of Judge J. Frank Gilham of the Madison County Circuit Court. He recently excused Charles W. Huskinson, an Alton coal dealer, on that ground. Huskinson was called on the jury but when he told the Judge it was his best season for making some money he was told to go about his business.

**Amherstdale, W. Va.**—The Fairmont Mining Machinery Co. recently received a contract from the Prockter Coal Co. for a complete equipment of its new development. This will consist of a dump, hopper, feeder, apron conveyor, three-track shaker, screen equipment, including two picking tables, and loading booms with refuse and mixing conveyors. When completed this will be a modern plant, with a capacity of 2,000 tons per day.

**Harrisburg, Penn.**—It has been announced by officers of the Gamble Fuel Briquette Co. that ground has been broken for the erection of a plant to turn out some 20,000 to 25,000 tons of specially prepared fuel per year. It is believed that operations will be begun early next year, and it is announced that the briquettes will be free from coal tar pitch which has been the smoke producing constituent of most of the coal briquettes heretofore manufactured.

**Bessemer, Ala.**—The Woodward Iron Co. has decided to open another coal mine in order to secure a larger supply of coal for its furnaces and ovens. It has been decided that a slope should be opened some distance from Dolomite, but striking the same bed of coal and getting a shorter underground haul than the company now has at the former mine. It is understood that this slope will be 600 ft. long and will be equipped in a thoroughly modern manner.

**Scranton, Penn.**—It has been announced that the Temple Coal Co. has decided to refund to its patrons the coal tax paid by them under the act of 1913, which has been declared unconstitutional. This is the first company to make a definite announcement in this regard. When the law was placed in effect instead of making the tax a separate item on the circular this company added 10c. to the prepared coal sizes and 5c. to pea and smaller and it is on this basis that the refund will be made.

**East St. Louis.**—Traffic officials of east side railroad lines, at a meeting recently, decided to waive collection of the increased rate on coal shipments from Illinois mines to East St. Louis accruing between Feb. 1 and Oct. 1. An increase of 5½c. a ton was allowed, effective Feb. 1, 1915, but was suspended by the Illinois Public Utilities Commission until Oct. 1. It was the conviction of the traffic officials that they had a legal right to enforce collection of the rate from the original date, but to avoid complications and contentions it was decided to make no effort to collect the increase except from Oct. 1, when it was sanctioned by the Illinois commission.



# Coal Trade Reviews

## General Review

**Anthracite** trade marking time pending arrival of colder weather; shipments behind last year and general tone excellent. Bituminous just holding its own. High record ocean freights restrict exports. Contradictory developments at interior points.

**Anthracite**—There is an excellent tone to the hard-coal trade with conditions uniformly favorable. Mining operations are at full capacity and there is no demurrage coal in any direction. Collections are in a more satisfactory condition than for a long time, and dealers are showing a disposition to keep full stocks so that any cold snap will start coal moving all the way back to the mines. Shipments so far have been filled with reasonable dispatch, but it is difficult to anticipate what may develop with colder weather. Concessions on the regular circular have been generally eliminated and prices are well sustained. Lake shipments for the season to the first of the current month, are slightly behind last year, but the movement continues heavy in spite of high vessel rates. September shipments show a gratifying increase but the movement to date for the year indicates a deficiency of close to 3,000,000 tons that is yet to be made up.

**Bituminous**—The absence of any spot business is creating a tendency to shade the circular in several instances, while the general publicity regarding a possible car and labor shortage is not influencing shippers seriously, and many are eager to cover for deliveries up to the first of the year. Some small operators are sending considerable consignment coal to the market but this is readily absorbed for storage purposes. Shipments are beginning to come through more slowly as the season advances, and certain railroad centers are now beginning to show definite indications of a congestion. The market has stiffened up moderately, the price tendency being upward, and shippers as a rule will not commit themselves beyond the first of the year.

**Exports**—With ocean freights at the highest level in the history of the mercantile marine, negotiations involving further exports of coal are practically at a standstill, though there is still much inquiry noted. The movement still continues on charters negotiated at the more reasonable figures prevailing some time ago, but the tonnage is showing a discouraging falling off. The October dumpings at the Hampton Roads piers were substantially less than the September figures, while the Baltimore exports touched the lowest point for the past four months. There seems to be little prospects for any relief in the vessel situation.

**Lake Markets**—With the iron and steel industry apparently up to full capacity, there has been no further increase in the demand for prompt coal in the Pittsburgh district, though prices on contracts have stiffened up still further. The situation is in some respects contradictory. Shippers with several outlets, particularly toward Tidewater, are doing substantially better than those with a more restricted market. Canadian reports continue discouraging. For the time being the market is undoubtedly holding its own, but when the Lake movement is closed, there are some uncertainties to be faced. In Ohio, requisitions are steadily increasing, the congestion and slow movement on the railroads exerting a stimulating influence and causing some anxiety among consumers. The domestic trade is still marking time pending the advent of lower temperatures. There is little consignment coal in evidence.

**Middle Western**—The high temperatures have created a marked dullness in the Middle Western domestic coals, but prices have been firmly maintained. The steam demand continues on about the same basis as before, and there is no complaint heard in this branch of the business. Curtailed output has had a beneficial effect in sustaining the market. The future outlook on both steam and domestic grades continues as encouraging as ever, and shippers are anticipating a large business at profitable figures through the balance of the season. Shipments out from the upper Lake ports have also been affected by the warm weather, and have fallen off somewhat during the past week, though this is regarded as only temporary.

**A Year Ago**—Anthracite trade marking time pending more seasonable weather. Bituminous operators becoming discouraged at the long delay in the expected improvement. Shortage developing in ocean freights.

## BUSINESS OPINIONS

**Iron Age**—The Steel Corporation's statement that its unfilled orders increased 847,000 tons last month gave the first definite measure of the steel trade's sensational leap forward in October. This is an unparalleled record but is thus only in keeping with all other developments in the current market. Price advances have had no effect of curtailing demand; it is in fact heavier now than at any other stage in the present remarkable movement. In the flood of orders in October domestic business figured to a larger extent than in many months. Exports in September of products reported by weight were 381,000 tons, against 401,000 tons in August. Values of all iron and steel exports, including machinery, were \$38,400,000, against \$37,727,000 in August. The scarcity of vessel room may have prevented the increase looked for in September, but the statistics raise the question whether the war export movement has yet reached its full maximum height.

**Boston News Bureau**—General confidence in this country is increasing every day. Conservative bankers are convinced that the commercial markets are making big strides forward. These close observers say that the country has been headed right for a considerable time but that now we have a breeze behind us and are speeding our pace up to maximum. Sometimes we are deceived because we are prone to take our cue from the security market, and whenever a reaction occurs there we attribute it to some serious defect in the general situation. But we forget that the stock market at times becomes overbought and that liquidation is the only corrective. It is best opinion that conditions are astonishingly sound. We are heavily long of both crops and money, two distinctively necessary ingredients.

**The Southern Lumberman**—Despite somewhat heavier shipments than orders with sharp increase in shipments and slight decrease in orders, the yellow pine market this week shows no diminution in strength, and in fact, when condition of stocks on hand is considered, the market is regarded as quite as strong as last week, which was the best week experienced by yellow pine manufacturers since the European war broke out. Price advances continue with remarkable frequency and from mills in all parts of the Southern producing territory. Better prices are also being obtained on numerous hardwood items this week, but such increases hardly keep up with the increased movement. This is due to a certain extent, no doubt, to the fact that the call is unusually well distributed and not centered on certain woods or particular grades of such woods, as is frequently the case.

**Marshall Field & Co.**—Current wholesale distribution of dry goods has been in excess of the corresponding period of a year ago. Road sales for immediate and spring delivery show marked increases and customers have been in much larger numbers. Collections are normal. Prices are firm.

**Bradstreet**—Two features loom large in this week's reports—the ever-widening activity of trade and the increased momentum attained in many industries. Out of these grow overtime in factory, mill and shop; progressive improvement in industries, almost wholly dependent on domestic wants; larger pay rolls; sustained, if not increased, demand upon jobbers and wholesale dealers; more confident future buying accompanied, however, by urgent calls for goods already ordered, and although mild weather has prevented retail trade in the cities from running its full course much of the slack in this respect has been taken up by increased buying in various country districts.

**Dun**—Though a full measure of recovery is not yet apparent in every branch of domestic enterprise, evidences of returning prosperity are multiplying throughout the commercial world. Of late, the constructive movement has swung forward with a rapidity seldom equalled, and in some respects recent developments are wholly lacking in precedent. Pronounced expansion in the volume of transactions and a further growth of optimistic sentiment featured the month just ended, when several new high records, including those of both production and distribution, were established.

## ATLANTIC SEABOARD

### BOSTON

**Pocahontas and New River unchanged. Delivered prices for next season still show a downward trend. Georges Creek apparently in comfortable supply, but a mild flurry prevails in the preferred grades from Pennsylvania. Water freights advance. Anthracite trade satisfactory.**

**Bituminous**—The Pocahontas and New River market shows the same features that have prevailed now for nearly a month. Prices f.o.b. are being held with reasonable firmness, but there is still a lack of spot business and in consequence a disposition here and there to shade the \$2.85 basis. The Southern coals are in ample supply and no talk of car shortage has so far materialized in decreased shipments from the fields that find outlet through Hampton Roads. There is even an eagerness on the part of most of the agencies to place coal for delivery between now and Jan. 1. Contract demand is slightly improved, probably on account of the publicity given labor conditions in other regions, but dispatch is excellent and the requirements of consumers in this territory are being promptly met. Apparently a "flurry" in Pocahontas and New River is some weeks off.

A considerable factor in the New England situation is the unwholesome scramble that has been going on now for three or four weeks for contracts next season on a minimum delivered price basis. The canvassing is being done very quietly, but is none the less effective. As low as \$3.40 on cars Mystic Wharf, Boston, Apr. 1, 1916, to Apr. 1, 1917, has been named on relatively small orders and already some of the larger buyers are showing their confidence that prices will go even lower. Each merchant is "protecting" his usual tonnage and the outcome is going to be very interesting.

There are still comfortable supplies of Georges Creek available at all the piers, and some of the far-sighted dealers are lining up for their winter requirements. Shippers of this grade who own their own transportation are profiting somewhat by the advance in water freights on such spot sales as they have made. F.o.b. prices on Georges Creek are so generally covered by contract in this territory that quotations rarely vary.

Cars all-rail are beginning to come through very slowly and certain of the transfer points show signs of congestion. There is every prospect that this condition will grow worse as the month advances and the first effect will be redoubled efforts on the part of consumers to get forward extra supplies.

**Water Freights** would have advanced more sharply had the rough weather continued. As it is, \$1 has been paid to Boston from Hampton Roads and it is likely that \$1.10 @ 1.15 will be the market within a few days. Consumers are anxious over shipments on contract, particularly at points that will soon close to navigation, and the even balance of supply and demand has been upset.

**Anthracite** trade is active. Retailers have been unusually busy and they adhere to their policy of keeping full stocks for the season's demands. Broken is the size in shortest supply, but most requisitions are pretty well distributed between the other domestic sizes. The shipping companies are filling orders with reasonable promptness.

Bituminous quotations, f.o.b. loading ports at points designated, are about as follows per gross ton:

	Philadelphia	New York	Baltimore	F.o.b. Mine
Clearfields.....	\$2.25@2.75	\$2.55@3.00	.....	\$0.95@1.50
Cambrias and Somersets.	2.45@2.95	2.70@3.20	.....	1.20@1.65
Georges Creek.....	2.92@3.02	3.22@3.32	\$2.85@2.95	1.67@1.77

Pocahontas and New River prices, on cars Boston, are \$3.45 @ 3.73. Providence, \$3.45 @ 3.63; and f.o.b. loading port at Hampton Roads, \$2.80 @ 2.85.

### NEW YORK

**No snap in hard coal, but prices are steady. Mining operations active with plenty of orders. Healthy situation in bituminous. Car shortage serious. No surplus at Tidewater and prices are good.**

**Anthracite**—The desired snap is lacking in the anthracite trade. Conditions are generally favorable, except some colder weather will be necessary to give the desired snap. Most operators have sufficient orders now to keep them going for the next several weeks. Independent operators are now getting the full company circular for their prepared coals. Demand is such that there is no great amount of coal on the docks, but this scarcity is of no great moment at this time. Some shippers are experiencing trouble in getting

shipments through from the mines on account of the freight congestion on nearly all roads leading to Tidewater.

Stove coal is the shortest of the prepared sizes. There is plenty of nut, while egg is easy and long; at times it is possible to pick up the latter size at from 5 to 10c. off, but this is the exception. In the line trade everything is bringing full circular. Pea coal is easy. Of the smaller coals the high grades are practically out of the market, some of them being quoted at slight premiums.

Quotations per gross tons, f.o.b. Tidewater, are as follows:

	Lower Ports		Upper Ports	
	Circular	Individual	Circular	Individual
Broken.....	\$5.05		\$5.10	
Egg.....	5.30	\$5.20@5.30	5.35	\$5.25@5.35
Stove.....	5.30	5.20@5.30	5.35	5.25@5.35
Chestnut.....	5.55	5.40@5.55	5.60	5.50@5.60
Pea.....	3.50	3.25@3.50	3.55	3.50@3.55
Buckwheat.....	2.75	2.25@2.75	2.80	2.25@2.80
Rice.....	2.25	1.85@2.25	2.30	2.00@2.30
Barley.....	1.75	1.50@1.75	1.80	1.75@1.80

**Bituminous**—There has been no let-up in the demand for bituminous coal, but shippers are handicapped by the lack of cars. Large consumers are anxious to accumulate stocks before the usual winter transportation difficulties start in and are urging deliveries. While the railroads are in some instances giving operators about 75% of their quota of cars, the shipments equal but a little more than 50% of normal production.

Spot coal is not as plentiful as a week ago and good prices are being obtained as a rule. Many small operators are sending consignment coal to the local market, but unless it is of the poorer grades there is no trouble in marketing it.

Contract buyers are taking all the coal they can get and asking for extra lots. Prices are being well maintained and hardly any coal can be picked up at Tidewater for less than \$2.70 f.o.b. Slack continues strong at from 95c. to \$1. Exporters tell of many inquiries, but complain of lack of bottoms. Bunkering continues active.

Current quotations per gross tons, f.o.b. New York, are as follows:

	South Amboy	Port Reading	St. George	Mine Price
Georges Creek Big Vein.....	\$3.20@3.30	\$3.20@3.30	\$3.20@3.30	\$1.75@1.85
Georges Creek Tyson.....	2.95@3.00	2.95@3.00	2.95@3.00	1.40@1.45
Clearfield:				
Medium.....	2.80@2.85	2.80@2.85	.....	1.25@1.35
Ordinary.....	2.75@2.80	2.75@2.80	.....	1.20@1.25
Broad Top Mountain.....	.....	.....	.....	1.25@1.45
Cambria County:				
South Forks.....	3.05@3.10	.....	.....	1.50@1.60
Nanty Glo.....	2.90@3.00	.....	.....	1.35@1.45
Barnesboro.....	2.85@2.90	.....	.....	1.30@1.35
Somerset County:				
Quemahoning.....	.....	2.90@3.00	2.90@3.00	1.35@1.45
Medium.....	2.80@2.90	2.80@2.90	2.80@2.90	1.25@1.35
Latrobe.....	2.70@2.75	.....	.....	1.15@1.20
Greensburg.....	2.90@3.00	.....	.....	1.25@1.35
Westmoreland.....	3.20@3.30	.....	.....	1.45@1.55
West Virginia Fairmont 1	.....	2.70@2.80	2.70@2.80	.90@1.10
Fairmont mine-run.....	.....	2.70@2.75	2.70@2.75	.90@1.10
Steam.....	.....	2.70@2.80	2.70@2.80	1.15@1.25
Western Maryland.....	.....	2.70@2.80	2.70@2.80	1.15@1.25

### PHILADELPHIA

**Anthracite moving steadily. Advance in pea has little effect. Buckwheat well taken, with special grades scarce. Broken strong, egg off circular, stove firmly held, and chestnut improving. Bituminous continues active, with prices unchanged.**

**Anthracite**—While there has been no special rush the business has been steady and satisfactory. It is apparent that most dealers have decided to carry full stocks and every cold snap from now on will bring business to both branches of the trade. We still consider the future bright for months to come. With the possible exception of egg size, all shippers are asking full circular prices. Everything is apparently going at full tilt, including all washeries, and there is not a car standing on demurrage at the scales.

There is much speculation among coal dealers as to when the state-tax "melons" will be cut and a great deal of good-natured dunning of the shippers to refund the tax. One or two of the larger concerns are quietly preparing checks and, after being assured by their legal departments that there can be no entanglements with the state, will probably do some clever advertising and cater to the good-will of their trade by trying to be the first to remit.

The raise in the pea coal price has had little or no effect on the coal trade. Large shipments are coming in, but it is practically all at the \$2-and-tax price which has been protected until Jan. 1. The only sales noted at increased figures were to the out-of-town dealers or the smallest of the city trade. After the first of the year the price will surely stiffen and it is even intimated that it will go to \$2.50 and the tax. Buckwheat is well cared for and at least one of the big companies will accept no business below \$1.35 or \$1.40. Special grades of this size have grown exceedingly scarce the past





## LAKE MARKETS

### PITTSBURGH

**Prompt coal strong and unchanged. Contract coal slightly stiffer, particularly slack. Operations 75% of capacity. Car supply continues off.**

The market for prompt coal has not stiffened further, but there is a decidedly stronger tone in contract coal, and particularly in slack. There has been no material increase in demand for free coal in the past week or two. The iron and steel industry had already worked up to its maximum capacity, while the same can be said of the railroads, which have had full employment for cars and locomotives for weeks. Domestic demand has not yet reached important proportions. For several weeks there has been stocking by railroads and to some extent by manufacturing consumers, while public service corporations, unable to take any risks, have been stocking steadily in a regular and conservative manner. With the recently improved outlook for coal the operators have been striving for production and thus the offerings are larger. The prompt market holds its own readily, but the market is nearing the time when Lake shipments will close, throwing additional coal on the market, before there is much demand for stocking coal against a possible mining suspension Apr. 1. It seems to be more or less generally expected that a wage advance will be demanded and granted, the uncertainty being chiefly as to whether or not the negotiations will be accompanied by a suspension of mining.

Gas slack has become distinctly stiffer and the slack market is quotable at a wider range than formerly. Mine-run is usually done at \$1.15, though many operators are asking \$1.25 and occasionally securing this price. We quote prompt coal as follows: Slack, 70@85c.; mine-run, \$1.15@1.25; ¾-in., \$1.25@1.35; 1¼-in., \$1.35@1.50, per net ton at mine, Pittsburgh district.

There are scarcely any more car shortages than a week ago, but the supply in general is quite below the desires of the trade and there is considerable complaint. Mining operations are at about 75% of capacity in the Pittsburgh district.

Contract coal, to Apr. 1, is firmer, but former minimum prices are still done on the most desirable contracts, except as to slack, which is extremely stiff. Demand for slack has been such in recent weeks, with a large tonnage of ¾-in. being produced for the Lake trade, that it is considered rather unlikely that the normal course of production will furnish a sufficient supply through the winter, and the question is already being canvassed whether slack will eventually reach the mine-run price. It costs scarcely anything, it is stated, to install crushing machinery, so that whatever the demand for slack the market cannot advance above mine-run figure. We quote on contracts to Apr. 1: Slack, 90c.@\$1; nut, \$1@1.10; mine-run, \$1.15@1.25; ¾-in., \$1.20@1.30; 1¼-in., \$1.30@1.40, per net ton at mine, Pittsburgh district.

### BUFFALO

**Difference of opinions regarding the market. Local market less active than Pittsburgh and Tidewater. Prices differ widely. Anthracite improving locally.**

**Bituminous**—The movement is fair, but dealers are much divided as to both prices and demand. Those dependent on the Pittsburgh market, are asking prices considerably higher, while the Allegheny Valley shipper is finding the going hard. It is not easy to reconcile this difference. Pittsburgh and the districts that can ship to Tidewater are independent of this market and are in some instances quoting fictitious prices to evade commitments in this direction. Allegheny Valley producers are restricted to this market and have to sell for what the consumer will offer. The difference will probably not last long. At the same time this market is clearly waiting for a return of activity in Canada and till that occurs the bituminous trade here will be dull. Quotations, therefore, will have to appear a little out of level, being as follows:

	Pittsburgh	Allegheny Valley	Penn Smokeless
Lump.....	\$2.80	\$2.50	\$2.55
Three-quarter.....	2.65	2.30	.....
Mine run.....	2.55	2.20	2.30
Slack.....	2.20	1.90	2.30

These quotations are for Buffalo and eastward to Rochester on a short-ton basis. East of Rochester all bituminous is sold on a long-ton basis.

**Anthracite**—There has been a steady improvement in the demand lately. Local retailers find that business is practically up to normal and likely to remain so far the rest of the season. It will take sometime to make up the lost tonnage, but the demand for chestnut is again very insistent.

The other sizes are not so active, there being a wide difference between chestnut and stove. The through rail demand does not increase as fast as it should at this time of the year even with the shortage of cars.

There is now no difference in the company circular and the independents prices, all getting uniformly into line for winter. The circular for Buffalo is \$5.60 for grate, \$5.85 for egg and stove, \$6.10 for chestnut, \$4.30 for pea, \$3.25 for buckwheat, \$2.75 for rice and \$2.50 for barley, all f.o.b. on cars, with 25c. additional for delivering on board vessels.

Lake rates are strong to Lake Michigan on account of the fleet going to Lake Superior for wheat. Milwaukee now pays 50c. which is an advance of 10c. Shipments for the week were 128,500 tons; for the month of October, 521,171 tons; for the season to November, 3,313,246 tons, as compared with 3,695,021 tons last season.

### TORONTO, CAN.

**Mild weather interferes with anthracite movement but bituminous shows improving tendency.**

The domestic demand for anthracite is less than usual owing to continued mild weather. There is some improvement in the demand for bituminous, as manufacturing in many lines is showing increased activity. The shortage of cars is still retarding deliveries, and while there are generally plentiful stocks of all other grades, slack continues scarce. Quotations per short ton for best grades are as follows: Retail, anthracite egg, stove and nut, \$7.75; grate, \$7.50; pea, \$6.50. Bituminous, retail, steam, \$5.25; screenings, \$4.25 to \$4.50; domestic lump, \$6; cannel, \$8. Wholesale f.o.b. cars at destination, three-quarter lump, \$3.79; screenings, \$3.15.

### COLUMBUS

**Steam business continues strong while domestic is a little slow, due to warm weather. Circular well maintained. Prospects for the future are good.**

Manufacturing in every line is still expanding and the fuel requisitions are growing larger. The expansion is not confined to iron and steel concerns but is noted in general lines of manufacturing. The tone of the market is correspondingly improved and prospects for the future continue bright.

The domestic demand is a little slow because of unfavorable weather. But reports show that stocks in the hands of retailers are not large and with a cold snap, business will undoubtedly show considerable activity. Holding up of shipments has been requested in a number of instances, but actual cancellations of orders are not common and retail prices are ruling firm.

Lake trade is attracting considerable attention and charting of bottoms is going on actively though prices are high. There will be activity in the Lake trade right up to the close of navigation.

Car shortage is growing worse as the winter approaches. This is especially true on the Chesapeake & Ohio and the Baltimore & Ohio. Other roads are also feeling the shortage. Circular prices are generally well maintained. There is a good demand for the small sizes because of the lessened supply.

Prices in Ohio fields f.o.b. mines, per short ton, are as follows:

	Hocking	Pomeroy	Eastern Ohio	Kanawha
Re-screened lump.....	\$1.60	\$1.65	.....	.....
Inch and a quarter.....	1.50	1.50	\$1.35	\$1.50
Three-quarter-inch.....	1.35	1.40	.....	1.35
Nut.....	1.25	1.30	.....	1.25
Mine-run.....	1.15	1.20	1.05	1.10
Nut, pea and slack.....	.70	.75	.65	.60
Coarse slack.....	.60	.65	.55	.50

Mines have been working at about the following percentages of full capacity:

District	Oct. 16	Oct. 23	Oct. 30	Nov. 5	District	Oct. 16	Oct. 23	Oct. 30	Nov. 5
Hocking...	55	60	65	60	Cambridge...	60	60	65	70
Jackson...	40	60	50	45	Massillon...	60	45	70	70
Pomeroy...	85	65	90	85	Eastern O..	85	85	80	80
Crooksville...	50	85	65	65	Average..	62	65	69	67

### CLEVELAND

**Demand keeps up fairly well, but warm weather retards activities. Supply of coal becomes limited in some lines. Market generally up.**

Two kinds of coal are practically out of the market here. Fairmount grades are too expensive as they have been for weeks and Youghiogeny slack is really scarce. Jobbers reported this week they could not buy large tonnages for immediate delivery and had to pay 90c. a ton at the mines for a few cars at a time. The supply of coal is being kept down as factories are laying in somewhat larger stocks. The late shipping to the Lakes is now under way, and as regular shipments cannot be counted on after Nov. 20, operators



are giving as much coal to the Lake trade as it will stand. Although Lake shipments are not as large as usual, they are heavier than a few weeks ago.

Bergholz and Massillon mines are behind on their orders of domestic sizes. The dealers did not do much buying early in the fall and when they did come in the operators were given more business than they could fill immediately. There has been no cold weather to force domestic buying, but the trade is fair and steady. A turn of cold weather would bring a rush of orders that would swamp the retailers for a few weeks.

The market generally is up with jobbers paying the following prices f.o.b. Cleveland per short ton:

	Poca- hontas	Youghio- gheny	Fair- mont	Berg- holz	Ohio No. 8
Freight rate.....	\$1.45	\$1.00	\$1.15	\$0.70	\$0.90
Lump.....	3.60				
Lump, 6-in.....				2.30	
Lump, 1 1/2-in.....		2.40		2.10	2.15
Lump, 1-in.....		2.30	2.15	2.00	1.95
Egg.....	3.60				
Egg, 6-in.....				1.90	
Mine run.....	2.75	2.15	2.05	1.90	1.85
Slack.....		1.90	2.00@2.05	1.70	1.70

#### TOLEDO

Pocahontas strong and lake shipments show advance for season. Steam coal strengthening. Car shortage becoming more apparent.

There is a better call for domestic coal and the steam grades are again coming into stronger demand. The close of navigation is now in sight and everybody is running their final shipments of Lake coal through as rapidly as possible. The car shortage has become quite apparent and it is already difficult to secure sufficient gondola cars. The Lake shipping has not been heavy this season although all of the docks have been pretty heavily rushed lately.

Pocahontas is keeping up well and the circular is being closely maintained. The mine price per short ton on Pocahontas lump and egg is firm at \$2.25. Nut is bringing \$1.75 while slack is quoted at \$1.25 and is very short due to the heavy demand from the steel mills. Domestic trade generally is not so strong because of the continued warm weather but steam coal is moving well. The car shortage is beginning to be generally felt although no serious situations have as yet developed.

#### DETROIT

Domestic trade feels stimulus of colder weather. Steam coal more active. Anthracite demand improves. Lake trade approaching the end.

**Bituminous**—Following a lapse in demand during the past two weeks, steam coal is again showing signs of increased activity. Orders are appearing more frequently, though the amount taken is usually not very large. Continued activity of industrial plants, with increasing production in some instances, adds encouraging basis for the belief that the improvement will be maintained.

Orders for domestic sizes are also more frequent with the coming of lower temperatures but shippers and jobbers have not benefited much as yet. Little consignment coal is now in evidence, lump and egg sizes being the most plentiful with occasional sacrifice sales. Prices generally are holding steady. Complaints of car shortage in some of the mining districts are more numerous, but the condition has caused little trouble as yet.

**Anthracite**—There is fair activity in distribution of anthracite from retail yards, though the dealers seem to have adequate supplies for the time being. Car shortage on Eastern lines may become an important factor in the situation later.

#### CINCINNATI

Continued scarcity of cars is the leading factor in the market. Demand still relatively sluggish, due to mild weather. Prices steady.

The shortage of cars, the supply averaging only about 33 to 40% of requirements, has held the market and had a stimulating effect on business. Except for this the trade would be almost back to the summer dullness. The retail trade is taking very little coal, and the industrial demand has not increased, so that the scarcity of cars has not caused any anxiety among consumers. This is worrying the trade considerably, however, as the demand is certain to be heavy when a cold snap comes. Prices are stiffening, and bid fair to be much higher.

#### LOUISVILLE

Warm weather depresses the market but the outlook is considered favorable. Car supply somewhat better.

Continued abnormally mild weather is exerting a depressing influence on the domestic market. Dealers are stocking more readily, however, and shipments have been somewhat better. The car shortage eased up a little and gave the East-

ern Kentucky mines an extra day during the week. The steam coal sales are somewhat brisker and the outlook in both classes is considered good.

Sales have been made during the week, f.o.b. mines, long ton basis, at from \$1.75 to \$2.10 or \$2.15 on Eastern Kentucky block with steam nut and slack continuing to sell around 40 to 50, and 70 to 75c, according to grade. The Western Kentucky market is still around \$1.25 for lump while the prices on pea and slack are variable.

#### BIRMINGHAM

Business continues to slowly improve. Heavy movement of river coal.

While business is not picking up as rapidly as hoped for still conditions are better than they have been for the past two years, both on steam and lump coal, and the prospects for a steady improvement during the coming fall and winter are exceedingly good. Prices are holding up well and collections are better than at any time in the past two or three years. River coal is moving in large quantities to Mobile and New Orleans, and while this is effecting the all-rail mines to some extent, the tonnage moving from the latter is far in excess of that for the same period last year.

### COKE

#### CONNELLSVILLE

Prompt furnace coke easier. Some business for next year. Prompt and foundry coke stiffer, with good prospects. Production and shipments increased further.

The pressure for prompt furnace coke seems to have ended late last week, producing an easier market even then, while this week demand is very light and no definite market has been developed. This week's outside price is not above last week's inside price. Contract furnace coke is not moving very rapidly, unless more business has been closed than appears on the surface. One contract has been closed for 10,000 tons a month over 1916 at \$2.25 flat, but the market for the early months is above this, while for the late months coke is expected to be cheaper as so many byproduct ovens are to be completed in the second quarter of next year.

Foundry coke is stronger and operators are very firm in their views as, considering the likelihood of box cars being very scarce, and prospects of increased foundry operations, the foundry coke market shows promise of being able to take care of itself better than the furnace coke market. We quote: Prompt furnace, \$2.40@2.50; contract furnace, first half, \$2.35@2.50; year 1916, \$2.25@2.35; prompt foundry, \$3@3.25; contract foundry, first half, \$3@3.25, per net ton at ovens.

The "Courier" reports production in the Connellsville and lower Connellsville region in the week ended Oct. 30 at 432,519 tons, an increase of 4,200 tons, and shipments at 441,911 tons, an increase of 4,363 tons.

**Buffalo**—There is the same feverish activity in coke. So many prices are quoted to stave off orders that it is not easy to obtain an authentic one. Jobbers are paying all the way from \$4.85 to \$5 for best 72-hr. Connellsville foundry. Stock coke is practically out of the market, the quotation being about \$4.10.

**Columbus**—Coke demand is strong and prices have advanced about \$1 per ton during the past 60 days. Pocahontas is moving well and the same is true of White and Red Ash. Anthracite is also in better demand.

**Birmingham**—There is nothing new in the coke market for the past week. The demand from the furnace companies continues steady and furnace coke is finding a good market at satisfactory prices.

### MIDDLE WESTERN

#### ST. LOUIS

High temperatures depress the market. Prices show a softening tendency.

Under the influence of high temperature there has been marked dullness during the week. A determined effort is being made to prevent rate demoralization and in the main the prices are holding but some who were forced to move Standard during the week let No. 6 lump and No. 2 lump go at 5 and 10c. less than the quotations. Reduced output has stimulated the price of screenings.

Quotations f.o.b. mines during the past week have ranged on the following basis per short ton:

	Frnk. Co.	Wimson. Co.	Staunton	Standard
6-in. lump.....	\$1.50@1.75	\$1.50@1.75	\$1.25@1.35	\$1.20@1.25
8-in. lump.....				1.25
2-in. lump.....			1.15@1.20	1.10
3x6 egg.....	1.40@1.75	1.40@1.65		1.00
2x6 egg.....				.80@.85
No. 1 nut.....	1.50@1.75	1.50@1.75		.80
No. 2 nut.....	1.40@1.50	1.40@1.50		.60
No. 1 washed.....		1.65	1.50	
No. 2 washed.....		1.25	1.10@1.25	
No. 3 washed.....		1.25	1.00@1.25	
No. 4 washed.....		1.20	1.05	
No. 5 washed.....		.60@.70	.50@.60	
Screenings.....	.60@.65	.60@.65	.25@.35	.25@.35

## DULUTH

Moderate weather causes a lull in shipments. No increase in receipts. Prices remain stationary.

The extraordinary mild weather for this time of year has caused a slight falling off in shipments. Agencies that cater to the dealer and retail trade report a temporary lull in the demand for coal. The inquiry from steam users and the railroads is well up to the average and no complaint is heard regarding this class of business. Receipts show no material changes from last week. Quotations per short ton f.o.b. cars, docks, Duluth, are as follows:

	Yough	Spint	Hock	Smokeless	Elkhorn
Lump.....	\$3.40	\$3.40	\$3.40	\$4.75	\$3.75
Dock run.....	3.10	3.10	3.05	3.25	3.25
Stove or nut.....	3.40	3.40	3.40	4.75	3.65
Screenings.....	2.40	2.40	2.25	2.75	2.40

In spite of the very mild weather a fair volume of business is being done in the anthracite trade. The householder is laying away a few tons in anticipation of a cold snap in the very near future, and as a result the dealers and retailers report that the domestic demand is well maintained. Quotations per short ton f.o.b. cars, docks, Duluth, are as follows: Egg and stove, \$6.85; nut, \$7.10; pea, \$5.55 and buckwheat, \$4.

## PRODUCTION AND TRANSPORTATION STATISTICS

## ANTHRACITE SHIPMENTS

The shipments of anthracite as reported to the Anthracite Bureau of Information amounted in October to 6,505,892 long tons. This showed an increase over the preceding month of September of 987,121 tons, but was still 138,584 tons short of the shipments in October, 1914.

The total shipments for the first ten months of 1915 amounted to 53,885,003 tons, against 56,712,057 tons in 1914, a decrease so far this year of 2,827,054 tons.

The shipments for October include all the coal moved from the breakers or washeries. In previous statements a relatively unimportant quantity put into storage by one of the transportation companies was not included.

Anthracite shipments for October and the first ten months of 1914-15 were as follows:

	October		10 Months	
	1915	1914	1915	1914
Phila. & Reading.....	1,199,284	1,092,056	9,195,089	9,961,608
Lehigh Valley.....	1,266,539	1,391,144	10,714,002	10,941,943
Cent. R.R. of N.J.....	895,895	892,386	6,532,694	7,452,435
Del. Lack. & West.....	888,609	990,570	7,679,800	8,128,793
Del. & Hudson.....	701,279	678,104	6,671,603	6,032,697
Pennsylvania.....	637,052	611,593	4,870,961	5,308,918
Erie.....	708,007	773,866	6,524,667	6,943,394
Ont. & Western.....	209,227	214,757	1,696,187	1,942,269
	6,505,892	6,644,476	53,885,003	56,712,057

Stocks at Tidewater Oct. 31 were 625,821 tons.

## NEW YORK EXPORTS

The value of the fuel exports from New York for September were as follows:

Anthracite		Bituminous		Coke	
Canada.....	\$72,608	Canada.....	\$483	Italy.....	\$12,720
Guatemala.....	22	Mexico.....	1,005	Norway.....	7,800
Panama.....	860	Trinidad and To- bago.....	4,000	Guatemala.....	39
Salvador.....	9	Cuba.....	1,900	Salvador.....	12
Mexico.....	175	Haiti.....	9	Mexico.....	1,099
Newfoundland and Labrador.....	4,192	Santo Domingo..	45	French West In- dies.....	161
Jamaica.....	20	Brazil.....	106	Brazil.....	240
Other British West Indies.....	494	Colombia.....	30	Chile.....	816
Cuba.....	341	Venezuela.....	53	Colombia.....	96
Santo Domingo.....	6,448	<b>Total.....</b>	<b>7,631</b>	Ecuador.....	227
Argentina.....	955			<b>Total.....</b>	<b>23,210</b>
Chile.....	2,774				
Venezuela.....	282				
<b>Total.....</b>	<b>89,180</b>				

## EXPORTS

Exports of domestic coal and coke from the United States, and bunker coal laden on vessels engaged in the foreign trade at the specified districts, during the month of August, 1915, were as follows:

	Anthracite	Bituminous	Coke
Maine and New Hampshire.....	1,418	22	
Maryland.....	2,128	210,760	5,775
Massachusetts.....	119		
New York.....	35,848	8,656	725
Philadelphia.....	9,499	154,965	1,742
Porto Rico.....		245	2
Virginia.....	212	662,122	2,125
Mobile.....		348	
New Orleans.....		997	18
Arizona.....		5,546	7,840
El Paso.....		8,115	17,911
Laredo.....		1,986	
Alaska.....		63	
San Francisco.....		22	22
Southern California.....	1	17	
Washington.....		288	3,994
Buffalo.....	128,190	166,113	31,708
Dakota.....	541	2,098	205
Duluth & Superior.....	2	1,301	41
Michigan.....		33,032	6,637
Ohio.....	8,000	643,216	2,123
Rochester.....	52,119	83,025	505
St. Lawrence.....	68,598	16,971	1,657
Vermont.....	472	940	55
Total.....	307,147	2,000,848	83,085

## BUNKER COAL

Districts	Gross Tons	Districts	Gross Tons
Maryland.....	52,914	Philadelphia.....	42,862
New York.....	257,570	Virginia.....	188,228

## I. C. C. DECISIONS

**I. C. C. Nos. 4,705, 6,526, 4,875—Coal Switching Reparation Cases at Chicago.**

Upon presentation of the issue whether or not complainants have been damaged and are entitled to reparation because of the payment of charges on carload shipments of coal, **Held:**

1. That complainants in Gilmore & Co. v. C. & N. W. Ry. Co. and in Hinners Co. v. N. & W. Ry. Co. have not proven that they were damaged by the payment of charges which were found to be unjustly discriminatory. In a discrimination case the measure of damage is not the difference between the two rates, but is a fact that must be proven with the same definiteness as would warrant a judgment in a court of law.

2. That complainants in Lill & Co. v. C., M. & St. P. Ry. Co. have been damaged and are entitled to reparation to the extent of 10 cents per ton on certain shipments and 5 cents per ton on others because of charges which were found to be unreasonable. No damage proven on that part of the charges which was found to be unjustly discriminatory.

**I. C. C. No. 7261—American Coal & Coke Co. vs. Michigan Central R.R. Co.**

On complaint that defendant unjustly discriminates against and unduly prejudices complainant by refusal to extend credit to it with respect to freight and demurrage charges accrued on carloads of coal held at Windsor, Canada, and Detroit, Mich., while extending credit to competitors under like circumstances: **Held:** That the evidence fails to show that complainant is discriminated against or prejudiced within the meaning of the act.

## FOREIGN MARKETS

## GREAT BRITAIN

**Oct. 22—**The scarcity of tonnage is more pronounced. Coal stocks are excessive and prices weak. Quotations are nominally as follows:

Best Welsh steam.....	Nominal	Best Monmouthshires....	\$4.44
Best seconds.....	Nominal	Seconds.....	4.32
Seconds.....	\$4.44	Best Cardiff smalls.....	2.76
Best dry coals.....	5.64	Cargo smalls.....	1.92

The prices for Cardiff coals are f.o.b. Cardiff, Penarth or Barry, while those for Monmouthshire descriptions are f.o.b. Newport, both net, exclusively of wharfage.

**Freight—**Chartering is restricted owing to tonnage scarcity. Rates all round continue very firm and are approximately as follows:

Gibraltar.....	\$6.72	Naples.....	\$9.60	St. Vincent.....	\$7.80
Marseilles.....	9.65	Alexandria.....	11.16	River Plate.....	10.20
Algiers.....	7.72	Port Said.....	11.16		
Genoa.....	9.60	Las Palmas.....	6.60		



## Coal Contracts Pending

*The purpose of this department is to diffuse accurate information of prospective purchases and prices with a view to affording equal opportunity to all, promoting market stability and inculcating sound business principles in the coal trade.*

†Indicates contracts regarding which official information has been received.

### Recast

In the following table we give a list of all old contracts coming up for consideration during the ensuing week. The table gives our contract number, the name of the purchaser, city tonnage and page on which the detail notice appeared.

No.	Purchaser	City	State	Tonnage	Page
1576	Lane Cotton Mills	New Orleans	La.	50 (cars)	700
1579	Cosmopolitan Hotel	New Orleans	La.	120 tons <sup>1</sup>	700
1603	Springfield Santr.	Krumroy Sta.	Ohio	15,000b	737
1605	State Capitol	Frankfort	Ky.		737
1622	City Government	Spokane	Wash.	600 <sup>2</sup>	787

b Indicates bituminous. <sup>1</sup> Per month. <sup>2</sup> Carload lots.

### Supplemental Notes

Under this heading additional or supplemental information regarding old contracts appears, together with the page number of the original notice.

†1356—**Storm Lake, Iowa.**—This contract (p. 411), providing for furnishing the local light and water department with coal during the ensuing year has not yet been let, the plant having changed hands, now being owned by a Boston firm—Hooper, Kimball & Williams. This contract involves approximately \$5,700 worth of coal. Address Dist. Mgr. C. H. Utter, Grinnell, Iowa.

1551—**East St. Louis, Ill.**—Swift & Co. have not yet decided whether to close this contract (p. 660) or continue purchases in the open market as they have been doing for the past several months. Address Pur. Agt. H. C. Huggins, Swift & Co., East St. Louis, Ill.

1557—**East St. Louis, Ill.**—Purchases on this contract (p. 661), which provides for furnishing Morris & Co. with approximately three or four cars of screenings per day are still being confined to the open market, though a contract may be let later. Address Pur. Agt. L. Chakes, Morris & Co., East St. Louis, Ill.

†1569—**Winner, S. D.**—This contract (p. 699), which provides for furnishing bituminous coal, as may be required at the local Court House during the coming winter, was bid on as follows: Montgomery Lumber Co., \$9.50; James A. Smith Lumber Co., \$9; Floete Lumber Co., \$8.50. Address Audr. F. E. Wells, Winner, S. D.

1573—**Philadelphia, Penn.**—Bids on this contract (p. 699, see also contract 1516, pp. 577, 660), calling for additional supplies on a deficiency contract until the end of the present year, were as follows: Belmont Pumping Station, 6,900 tons pea, Smith, Lineaweaver & Co., \$3.47; Belmont Pumping Station, 6,900 tons pea, Susquehanna Coal Co., \$3.47; Queen Lane Filters, 300 tons pea, Philadelphia & Reading Coal and Iron Co., \$4.11; Spring Garden Pumping Station, 100 tons pea, Philadelphia & Reading Coal and Iron Co., \$3.48; Queen Lane Pumping Station, 7,400 tons buckwheat, Philadelphia & Reading Coal and Iron Co., \$2.72; Roxborough Auxiliary, 1,000 tons buckwheat, Philadelphia & Reading Coal and Iron Co., \$3.11; Belmont Pumping Station, 2,300 tons buckwheat, Susquehanna Coal Co., \$2.43; Lardner's Point Pumping Station, 17,000 tons buckwheat, Emmons Coal Mining Co., \$3.04. Address Dir. Herman Loeb, Dept. of Supplies, Philadelphia, Penn.

†1583—**New York.**—Bids have been received on this contract (p. 700), which provides for furnishing the Department of Docks and Ferries with approximately 2,000 tons of No. 3 buckwheat for the Borough of Richmond, as follows: Pat-tison & Brown, \$1.97; Joseph P. O'Connor, \$2. The contract has not yet been awarded. Address Comr. R. A. C. Smith, Pier "A," New York.

1584—**New Orleans, La.**—This contract (p. 700), which provides for furnishing William Henderson with approximately 50,000 tons of coal will be closed some time in December. Address William Henderson, 749 South Peters St., New Orleans, La.

†1585—**Montclair, N. J.**—This contract (p. 700), which provides for furnishing the Montclair School with 600 tons of pea and 70 tons of stove coal has not yet been awarded there being only one bidder and the state laws prohibiting closing the contract under this condition. Formal request has been made to continue purchases in the open market which is expected will be granted. Address Chn. Melvin A. Rice, Normal School Committee, State House, Trenton, N. J.

### New Business

1624—**Louisville, Ky.**—The Southern Brick and Tile Co., at this place will contract some time in December for their annual requirements of coal involving 5,000 tons of nut and slack, 1,500 tons of nut, and 1,000 tons of mine-run. The company has a storage capacity of 3,000 tons, and deliveries are made by railroad at the rate of about 25 tons per day. Address Pur. Agt. T. Bishops, 13th and Ormsby St., Louisville, Ky.

†1625—**Marshall, Minn.**—Bids were received until 7.30 p.m., Nov. 8, for furnishing the City Power Plant with approximately 1,800 tons of any of the following grades of coal: Franklin County 2-in. screenings; Miller Creek 2-in. screenings; West Virginia White Ash Splint, 2-in. screenings; Youghiogheny (thin vein) 2-in. screenings; Carterville Washed nut; General Wilmington Washed Carbon; Semi-anthracite 2-in. screenings. Deliveries are to be in carload lots on the sidetrack at the city power plant near the C. and N. W. R.R. Address Recorder T. L. Bumford, Marshall, Minn.

†1626—**New York, N. Y.**—The Board of Trustees of the Bellevue and Allied Hospitals will receive bids until noon Nov. 15, for furnishing and delivering approximately 3,000 gross tons of buckwheat No. 1. Delivery is to be completed by Dec. 31. For details concerning the bids and award on the previous contract see No. 1415, pp. 448 and 662. Address Auditor, Board of Trustees, Bellevue and Allied Hospitals, 400 East 29th St., New York City.

†1627—**Belfield, N. D.**—The Board of County Commissioners at this place will receive bids until 2.30 p.m. Nov. 15, for furnishing either lignite or Western bituminous coal, as may be required at the local court house during the ensuing year. Successful bidder will be required to furnish a bond for \$400. Address County Aud. J. L. Hughes, Belfield, N. D.

†1628—**Newark, N. J.**—Bids will be received between 2.30 and 3 p.m., Nov. 22, for furnishing the Newark City Hall at Verona with approximately 1,000 gross tons of pea coal. Complete details may be had on application. Address Secy., Carl Heller, Mayor's Office, City Hall, Newark, N. J.

†1629—**Beach, N. D.**—The Beach School Dist. No. 3 received bids until 8 p.m., Nov. 3, for furnishing coal as may be required at the local School Houses during the ensuing year. All bids were to be f.o.b. track at Beach. Address Clk. C. O. Halvorson, Beach School Dist. No. 3, Beach, N. D.

1630—**Buffalo, N. Y.**—G. Elias & Bro., Inc., require about 1,000 tons of coal during December, January, February and March. The company has no contract. Deliveries are made by railroad at the rate of 250 tons per month. Address Pur. Agt. I. Gillespie, G. Elias & Bro., Inc., 965 Elk St., Buffalo, N. Y.

1631—**Council Bluffs, Iowa.**—The City Council received bids until 7:30 p.m., Nov. 1, for furnishing coal as may be required during the coming season. Bids were requested on Centerville, Iowa, 8-in. lump, Nokomis 1½-in. lump, Witt 1½-in. lump, Hillsboro 1½-in. lump, Taylor Springs 1½-in. lump, Lehigh Valley anthracite range and egg coal. All bids were to be accompanied by a certified check for \$100. Address City Clk. Charles J. Duff, Council Bluffs, Iowa.

†1632—**Greenville, Ohio.**—The Darke County Board of Commissioners will receive bids until 10 a.m., Nov. 13, for furnishing approximately 100 tons of Pocahontas lump coal, f.o.b. cars, P. C. C. & St. L. sidetracks at Greenville. A deposit of

\$25 must accompany each bid. Address Clk. G. H. Garrison, Darke County Board of Commissioners, Greenville, Ohio.

**+1633—New York, N. Y.**—The Central Purchasing Committee will receive bids until Nov. 22 for furnishing and delivering 10,000 tons of anthracite coal to the departments of Corrections, Public Charities, Parks (in Brooklyn) Fire, Water Supply, Gas and Electricity. Address Central Purchasing Committee, Room 1226 Municipal Bldg., New York City.

## Contracts Awarded

Note—Successful bidders are noted in **bold face type**.

**1361—Davenport, Iowa.**—This contract (pp. 411, 616), which provides for furnishing the fuel requirements of the Moline Rock Island Manufacturing Co. and the Tri-City Railway and Light Co., was awarded to the **Alden Coal Co.** of Davenport, and the **Spoon River Coal Co.**, of Rock Island, Ill. The combined companies consume approximately **75,000 tons** of 1½-in. screenings per annum. Address Pur. Agt. George G. Kuhn, Moline Rock Island Mfg. Co., Davenport, Iowa.

**+1423—Topeka, Kan.**—The tonnage involved on this contract (pp. 489, 662), awarded to the **Southwestern Coal Co.**, is 2,400 tons instead of 400 tons as previously noted. Address Supt. E. G. Stahl, Municipal Electric Light Dept., Topeka, Kan.

**+1496—Virginia, Minn.**—This contract (p. 577), which provides for furnishing the City Government with approximately 100 tons of either Pocahontas or anthracite buckwheat, egg, nut or stove coal, has been awarded to **Johnson & Peterson**. Address City Clk. Albert E. Bickford, Virginia, Minn.

**+1506—Trenton, N. J.**—This contract (p. 577), which provides for furnishing the New Jersey State Prison with coal as may be required at different camps during the ensuing year has been awarded to **Max Feinshein** as follows: Bituminous, \$3.35; broken, \$5.35; stove, \$6.30. Address Fiscal Agt. J. P. McCormack, State Prison, Trenton, N. J.

**+1544—Nebraska City, Neb.**—This contract (p. 617), which provides for furnishing the Otoe County Board of Commissioners with approximately 140 tons of coal, has been awarded to the **Otoe Lumber Co.**, at \$3.96 per ton for Missouri screened soft coal. Address County Clk. Louis J. Stutt, Nebraska City, Neb.

**+1556—Youngstown, Ohio.**—This contract (p. 661), which provides for furnishing the Mahoning County Commissioners with three-quarter inch screened coal as may be required at the Court House and Jail during the ensuing year, has been awarded to the **Youngstown Coal and Supply Co.** at \$2.35 per ton. Address Clk. Frank H. Vogan, Mahoning County Comrs., Youngstown, Ohio.

**1579—New Orleans, La.**—This contract (p. 700), which provides for furnishing the Cosmopolitan Hotel with approximately 120 tons of coal per month, has been awarded. Address Major Stewart, Cosmopolitan Hotel, 120 Bourbon St., New Orleans, La.

**1582—Erie, Penn.**—This contract (p. 700), which provides for furnishing approximately 25 cars of three-quarter screened Pittsburgh lump coal, has been awarded to **E. J. Gebhardt** at \$1.95 per ton. Address County Controller, Joseph E. Leslie, Erie, Penn.

**1587—Jeanette, Penn.**—This contract (p. 700), which provides for furnishing the Jeanette Borough School District with coal as may be required during the ensuing year, has been awarded to the **Westmoreland Coal Co.** at \$1.40 per gross ton for mine-run coal f.o.b. mines. Address Secy. J. V. Rovensky, Jeanette Borough School Dist., Jeanette, Penn.

**+1595—Hollidaysburg, Penn.**—This contract (p. 736), which provides for furnishing the county government with coal has been awarded to the **Thermic Coal and Supply Co.**, on their "E" Vein bituminous coal as follows: 700 tons for delivery at the heating plant in the jail yard, \$1.99; 80 tons for delivery at the Williamsburg Training School, \$2.50. Address County Consumer, P. W. Tobias, Blair County, Hollidaysburg, Penn.

**1596—Kenmare, N. D.**—This contract (p. 736), which provides for furnishing coal for the various City Departments as may be required during the ensuing year, has been awarded to **Jonas Johnson**, at \$2.65 per ton for lignite coal delivered. Address City Audr. Evan Griffith, Kenmare, N. D.

## Contract Notes

**Phillip, S. D.**—The bid of the Atlas Lumber Co. to furnish hard coal for Haakon County was accepted at \$13.25 per ton.

**Mankato, Minn.**—Contract for furnishing the local jail, court house and poor farm with coal during the ensuing year

has been awarded to **S. K. Fowler** at \$5.75 for Island Creek splint coal.

**Wibaux, Mont.**—The contract for furnishing the local County Government with coal during the ensuing year has been awarded to the **Midland Coal and Lumber Co.** Address County Cl. J. R. Chappell, Wibaux, Mont.

**Danbury, Conn.**—On the contract for furnishing the City Hall with approximately 100 tons of egg coal, E. C. Marsh & Co., bid \$7 per short ton, including cost of delivery. Address Chn. A. H. Fillow, City Hall, Danbury, Conn.

**Springfield, Mo.**—A contract has been let by the county commissioners of Greene County, for the coal supply for the court house and county jail, until Sept. 1, 1916, to the **Merchant's Ice and Fuel Co.**, of Springfield, at \$3.40 a ton, delivered, for Kansas deep shaft coal.

**Philadelphia, Penn.**—C. J. Milne & Sons, at this place, consume about 2,000 tons of bituminous coal per annum, deliveries being made on the railroad siding at their plant. They have a storage capacity of 150 tons. Address the Purchasing Agent, C. J. Milne & Sons, 11th and Washington Ave., Philadelphia, Penn.

**Philadelphia, Penn.**—Pecora Paint Co., at this place, consumes about 600 tons of anthracite coal per annum. They have storage capacity for 100 tons, and deliveries are made by railroad at the rate of about 50 tons per month. Address Pur. Agt. F. B. Bowen, Pecora Paint Co., 4th and Venango St., Philadelphia, Penn.

**Troy, N. Y.**—The Aird-Don Co. at this place consume approximately 250 tons of bituminous coal per annum, deliveries being made by railroad and wagon at the rate of about one car a month. They have storage capacity for about 25 tons. Address Pur. Agt. Thomas C. Boswell, care of Aird-Don Co., 411 River St., Troy, N. Y.

**Philadelphia, Penn.**—The anthracite shippers in this territory are understood to be quietly notifying their contract customers that owing to possible trouble in the region on Apr. 1 no contracts will be made on Jan. 1, at which time most anthracite contracts expire, but that the old contracts will be carried over until Mar. 31, 1916.

**Louisville, Ky.**—Sam D. Jones, business manager for the Board of Education of the public schools of Louisville, is considering making use of natural gas in the heating plants of the public school buildings, in place of coal which is now used. General installation of gas heating plants will not be possible at the outset because the service pipes of the Louisville Gas and Electric Co. are not available for more than a few of the schools. For bids and award on the school contract see contract 730, Vol. 7, p. 916, Vol. 8, p. 78.

**New York.**—By purchasing their coal supply through the Central Purchasing Committee, 28 city departments have been able to buy at reduced prices. According to a recent report of the Committee there has been an average reduction of 2.7c. in the price of chestnut coal, 31.6c. in the price of buckwheat No. 3 and 40c. in mine-run. The committee has purchased during the present year 269,199 gross tons of coal and the average price of chestnut coal was \$6.544 per gross ton as against \$6.571 paid in 1914; buckwheat No. 3, \$2.351 per gross ton as against \$2.667 and for mine-run \$3.136 per gross ton as against \$3.536 per gross ton paid in 1914.

## Foreign Notes

**Brazil.**—An American consular officer in Brazil reports that a firm in his district desires prices for charter shipments, f.o.b. New York or other water points, on coal. Statements of analyses should be sent.

**Portugal.**—Prices of coal in Portugal, already double what they were before the war, are gradually increasing, and the supply of fuel on hand is very small. The latest quotations for Welsh coal are \$10.20 to \$10.70 and \$11.90 to \$12.90 c.i.f. Lisbon. Lower qualities bring \$9.25 to \$9.50. The English freight rate is also advancing and is now \$4.15 to \$4.85 a ton. It is admitted that America could supply this market if freights from the United States were around \$4.85 to \$6.10 per ton.

**Italy.**—The British steamship Washington has been chartered to carry a cargo of 7,000 tons of coke to Italy. The vessel is now loading its cargo at the Port Richmond piers of the Philadelphia & Reading Ry. at Philadelphia. The coke has been furnished by the Public Service Corporation, Camden, N. J., from their byproduct coke ovens. The shipment of American coke to a foreign port is exceptional and is brought about by the fact that supplies are no longer available from Germany. The one great objection to increasing shipments is due to the scarcity of vessels and the high rate of freight, which in the present instance represents a value three times greater than the cargo.



## Financial Department

### Pond Creek Coal Co.

President T. B. Davis reports for the year ended Dec. 31, 1914, as follows:

The total production of coal for the year amounted to 690,653 tons, an increase of 160,104 tons over 1913. Although the company was only in its second year, it had been hoped that a larger production would be reached; but conditions arose which made this impossible. The coal produced finds an important market as a byproduct coking coal, and consequently is, to a considerable extent, dependent upon conditions in the steel industry.

After the first few months of the year, when the company did not earn its bond interest, earnings improved, so that for several months fairly substantial profits above interest were being made until the severe depression of business in the fall occurred, curtailing the output to an extent that made it impossible to earn the bond interest. We have every confidence that with an increase in the output, which is to be looked for on a return of better conditions, the company will earn substantial profits above charges.

Net additions to capital account, amounting to \$158,004, were made during the year, and these cover principally the cost of completing tenement houses of which the company now owns 629, the cost of completing 15 better class houses, 4 store buildings, and other expenditures. The equipment additions cover principally the cost of 6 mining machines, 14 gathering locomotives, 350 steel mine cars, 2 refrigerating machines for the stores, etc. No depreciation has been set aside this year. When the development of the property is further advanced, this matter will be carefully considered, with a view to fixing a rate which will be sufficient to cover the depreciation on your plants.

#### INCOME ACCOUNT FOR YEAR ENDING DEC. 31, 1914

Gross earnings.....	\$104,137	Gross income.....	\$100,544
Net earnings.....	80,497	Bond interest.....	120,000
Other income.....	20,047	Balance, deficit, for year.....	19,456

#### BALANCE SHEET DEC. 31

Assets	1914	1913	Liabilities	1914	1913
Real estate.....	\$997,145	\$1,001,508	Stock.....	\$2,000,000	\$2,000,000
Construction, etc.	1,702,802	2,050,303	Share premium account.....	250,000	250,000
Equipment.....	505,846		1st M. conv. bonds.....	2,000,000	2,000,000
Cash.....	702,440	1,018,484	Accounts payable.....	31,578	115,064
Prepaid insur., etc.	18,485		Accrued pay-roll.....	8,699	18,580
Accounts receivable.....	97,184	99,532	Drafts in transit, etc.....	12,046	17,917
Inventories, etc.	260,965	241,914	Funds and reserves.....	2,000	10,180
Profit and Loss, def.....	19,456				
Total.....	4,304,323	4,411,741	Total.....	4,304,323	4,411,741

Note—For previous annual report of this company, see Vol. 6, pp. 656, 934.

### Island Creek Coal Co.

Pres. Thos. B. Davis, reports for the year ended Dec. 31, 1914, as follows:

Our production during 1914 amounted to 2,207,444 tons, an increase of 291,344 tons over 1913. Market conditions were not altogether satisfactory at any time of the year, and especially during the last half, when, due to the war in Europe, business generally was, as a matter of course, considerably unsettled, a reaction unfavorable to the coal business set in, which doubtless reduced the total amount of coal that otherwise would have been produced at your properties. In spite, however, of existing conditions, the net profits increased by \$193,808 to a total of \$823,481, the highest amount yet reached.

In order to increase our production, it was decided to open up two new mines, Nos. 11 and 12, on Main Island Creek. To provide power for these new mines, and also to allow of a greater production at certain of the other mines now in operation, it became necessary to make additions to the power system. These additions now completed, include two 400-hp boilers, a 1000-kw. turbo generator set and auxiliary equipment, two 600-kw. sub-stations and equipment, 500 steel mine cars, eight 6-ton gathering locomotives, over two miles of railroad sidings for the new mines, two steel tipplers and equipment, 23 complete and 15 partially completed dwelling houses, store building, mining machines, etc.

To improve our river plant at Sekitan, Ohio, a large part of the old plant was replaced by a new plant which will have

greater capacity than the old equipment, and very much improved facilities, together with additions to the dry docks and floating equipment. The total amount of all expenditures capitalized, after deduction of the cost of structures replaced by new works and charged to depreciation fund, amounted to \$376,550. Additions were made to the depreciation fund on the same liberal basis as previously, and a large amount was charged against the depreciation fund, representing additions and betterments, which it was thought desirable not to capitalize, such as new steel mine cars, to replace wooden cars, reconstruction of a number of mine cars, storage tracks in the mines, two steel bridges, strengthening trestle, etc. Depreciation and reserve funds have decreased by \$50,511, due to the large amounts charged against these funds as above mentioned, which exceeded the additions thereto.

Dividends on the preferred stock at the rate of \$6 per share per year and ordinary dividends on common stock at the rate of \$2 per share per year, as well as an extra dividend on the common stock of \$3 per share, were paid during the year 1914. The extra dividend is a distribution of accumulated surplus.

#### CONSOLIDATED EARNINGS STATEMENT YEARS ENDING DEC. 31

	1914	1913	1912
Net earnings.....	\$1,008,388	\$800,448	\$811,048
Reserve for exting. and depreciation.....	119,672	106,047	95,357
Net profits.....	\$888,716	\$694,401	\$715,691
Administration and general expenses.....	69,480	70,392	57,253
Balance.....	\$819,236	\$624,009	\$658,438
Add—Int. on bank deposits, etc.....	4,245	5,663	18,694
Total net profits.....	\$823,481	\$629,672	\$677,132
Preferred dividends.....	\$298,872	\$298,754	\$298,659
Common dividends.....	562,711	530,943	401,280
Balance deficit.....	\$38,102	\$200,025	\$22,807

#### CONSOLIDATED BALANCE SHEET DEC. 31 (INCL. SUBSIDIARIES)

Assets—	1914	1913	Liabilities	1914	1913
Property account.....	\$5,470,791	\$5,094,241	Stock (not par—see below).....	\$4,502,355	\$4,493,974
Bond redemption fund.....		3,150	Cap. stk. of U. S. C. & Oil Co. not held.....	13,125	15,325
Cash.....	364,399	731,787	Def. pay'ts on prop.....	87,609	101,125
Accounts receivable.....	399,330	426,504	Current liabilities.....	183,229	150,274
Coal in transit and in storage.....	525,450	299,421	Dividend paid Jan. 1.....	74,727	74,691
Materials and supplies.....	254,658	210,000	Premium on shares of com. stock.....	905,520	602,651
Unexpired insurance, prem. paid, taxes, etc.	24,669	32,771	Deprec., etc., funds.....	459,874	510,385
			Undiv. sur. (sub. cos.).....	2,164	1,653
			Surplus.....	810,694	848,796
Total.....	7,039,297	6,797,874	Total.....	7,039,297	6,797,874

x Includes 49,820 15-18 shares pref. and 99,641 12-18 shares common stock issued in exchange for 179,355 shares of stock of U. S. Coal & Oil Co. par value of which is \$4,483,875, and 18,480 shares common issued for cash, par value \$18,480; total, \$4,502,355.

y Current liabilities include accounts payable, \$115,261; accrued pay-rolls, \$16,580; drafts in transit, \$24,392; accrued taxes, \$26,995.

z Applicable to stocks not held by the Island Creek Coal Co.

Note—For previous annual report of this company see Vol. 6, p. 252.

### Delaware, Lackawanna and Western

The annual report for the year ended Dec. 31, 1914, says:

Our coal mining operations resulted in producing 9,050,076 tons of coal from collieries and washeries, or 206,013 tons more than in any previous year.

Extraordinary expenditures aggregated \$778,553, notably \$285,959 for development of the new Loomis Colliery and \$121,864 for opening up and developing of new Laurel Run property. These developments should, by the latter part of 1915, turn out a substantial tonnage each, and when completed will add largely to our total capacity of production. The further development of the Truesdale Colliery by the introduction of electrical and other machinery, pumps, etc., required a large expenditure, viz.: \$124,402; this colliery is now the largest single producer in the anthracite fields, its tonnage last year amounting to 1,152,100 tons.